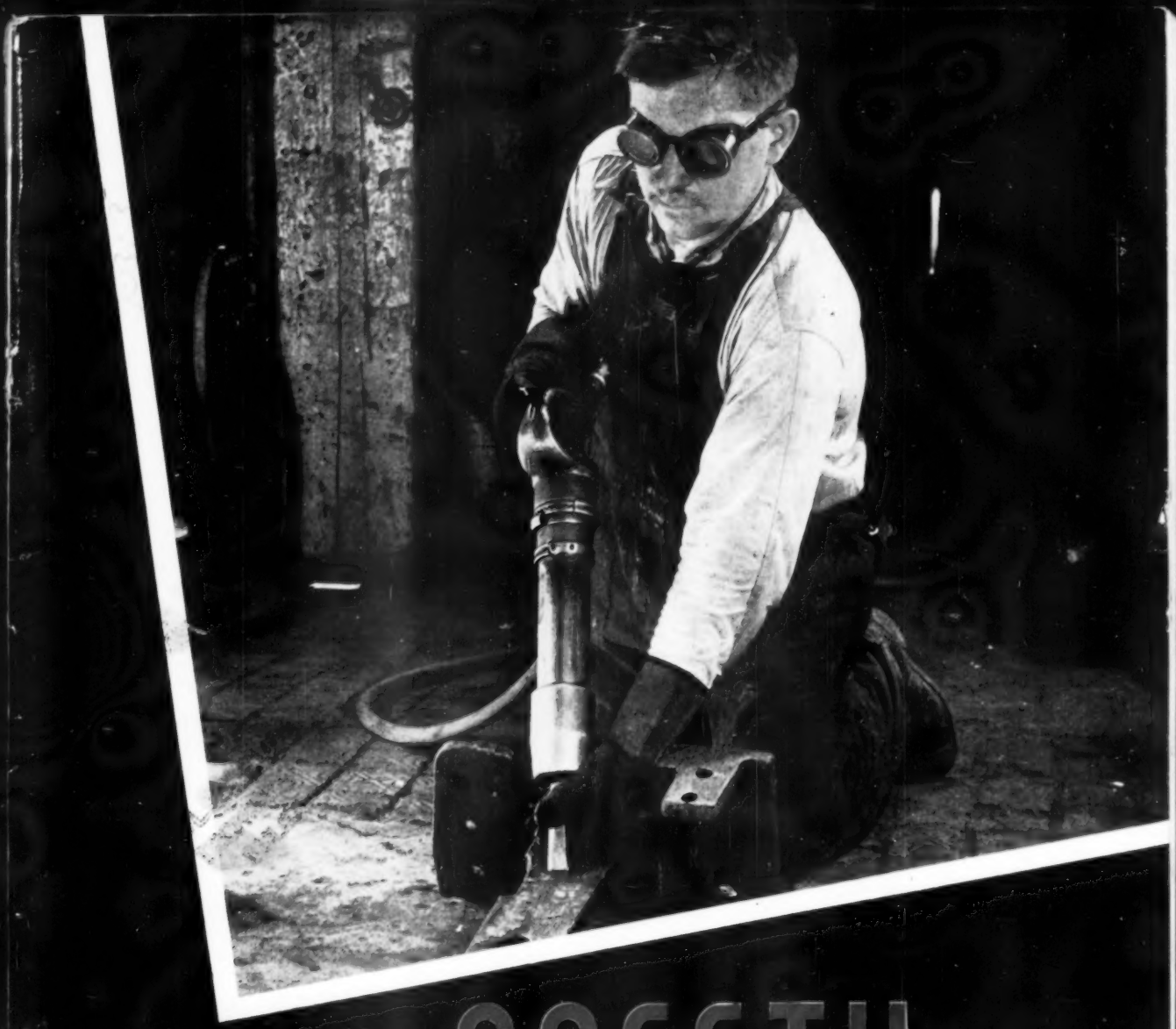

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EST. 1901

MARCH, 1952
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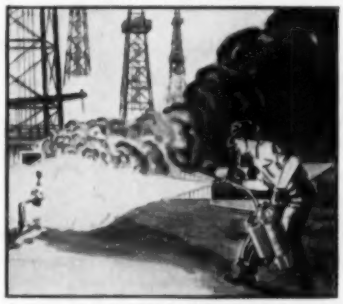

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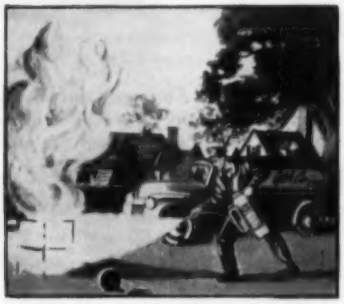

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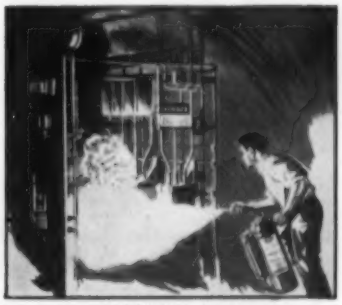

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FORMERLY "SAFETY ENGINEERING"

The Magazine of Safety

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EST. 1901

VOL. 103, NO. 3 MARCH, 1952

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AMERICA'S PIONEER MAGAZINE IN ITS FIELD

SAFETY MAINTENANCE & PRODUCTION is indexed regularly by Engineering Index, Inc., New York

make any job softer

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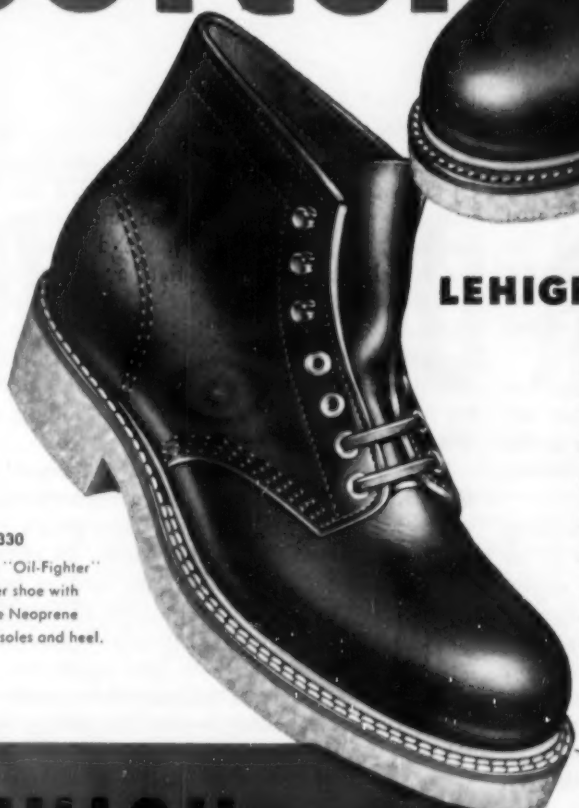
3-eye tie "Oil-Fighter" blucher oxford with long, seamless vamp. Neoprene crepe sole and heel.



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It's Safe to Say

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★ LO, THE POOR EXHIBITOR!

THE influence of the safety field is spreading all over the country as never before. It is most encouraging to note how many regional safety meetings and congresses are being held, as shown by a partial listing elsewhere in this issue under the title, "The Future Shows." Any step forward that will expand the horizon of safety and good maintenance as vitally component parts of production deserves encouragement and we are all for it!

But what of the poor exhibitor who is importuned to take a booth as often as 25 times a year! Where will the average exhibitor find the time, the resources or the staff to show his wares at every regional safety meeting, many of which actually overlap?

Safety meetings which bring together operating, supervisory and safety leaders do a great service in implementing the cause of loss prevention. Their subject sessions can present the lastest findings in the development of accident prevention, plant maintenance, fire control and industrial health conservation. Especially is this true if the program includes a new approach instead of the too-frequent rehash of obvious material and boresome platitudes. But why must exhibitors sit around in their booths staring at one another while all the delegates are attending meetings? It simply is not fair to the manufacturer who has been pressured into spending considerable sums of money each year to rescue financially embarrassed sponsors.

★ ★ ★

We make the point that there are not too many safety meetings but there certainly are too many exhibits so long as the procedure follows the present line.

Prospective exhibitors would look with greater favor on the smaller safety conference if at least one full day were kept free of all talks, addresses and meetings. Thus the harassed delegate would not find himself wondering how he can divide his time and attention. The visitor would be able to see the latest trend in protective products; he would have the opportunity to present special problems to manufacturers' representatives who almost invariably are in business to work out solutions for special needs, and certainly the exhibitor deserves this consideration.

Far too many safety conference sponsors attempt to fill each day with sound and fury while neglecting those whose funds, in many instances, have gone a long way toward making the meetings possible. In privately expressed views, manufacturers have used an ugly word in describing the host of conventions all over the country where they are expected to exhibit while delegates are sprawled in smoke-filled meeting rooms. By the time the visitor has been regaled with tiresome speeches, badly read several times in one day, usually he is too fatigued to visit the exhibit area or to give more than a casual glance to equipment on display as he wends his weary way to the nearest refreshment area.

Since few sponsoring groups will take the initiative in curtailing the growing number of exhibits, then it would seem logical to give careful thought to the needs of exhibitor and delegate alike. This can be done by throwing those two interests closer together even if it means cutting down on many speeches whose themes are built upon the less-than-original premise that accidents are awful and safety is worthwhile. H.A.

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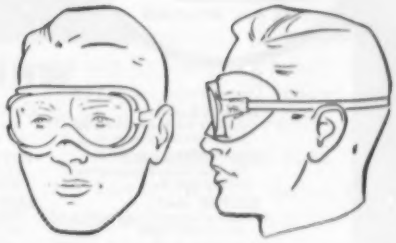

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Williams & Co., Inc.
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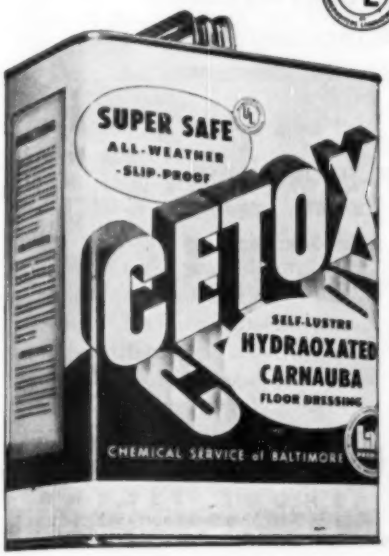

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SAFETY MAINTENANCE & PRODUCTION

VOL. 103, No. 3 • MARCH, 1952

FIND THE BROKEN BOTTLE! This unretouched photograph shows how an unwary route salesman may be trapped into injury by unnoticed broken bottles. In addition to broken "empties," full bottles can explode or be broken in transit; and in trying to pick up the razor-sharp fragments, many employees receive severe cuts. The answer to the problem is, of course, that protective gloves should be worn.

ance carrier involved, and a similar situation exists in other states.

Like so many things on the American scene, accidents cost more than they used to. A major reason for this is the rising cost of medical attention, hospital services and medicines. It is clear that each member of the bottling industry has a dollars and cents interest not only in his own accident experience but also in that of his contemporaries. Accident costs throughout the industry can be held down in one way only: accident prevention!

To prevent accidents one must have some plan of action. Certainly

Battling Accidents in Bottling Plants

This bottling plant accident report is from an analysis prepared by the Safety Engineering Department of a leading insurance company for the Texas State Bottlers' Association.

IN 1947 the sponsors of this accident analysis made a study of 1026 sugar drink bottling accidents which had a Workmen's Compensation insurance cost of $41,745.93. Now comes a sequel with 121 fewer accidents but $31,907.05 more in cost. The average cost of the accidents in the first study was $40.68, but in this second analysis, made in 1951, the average is upped to $81.38.

To anyone in the soft drink bottling business especially, these figures on rising accidents costs have a very real significance. Why? When the Texas Board of Insurance Commissioners promulgates basic workmen's compensation rates—whatever the industry—a prime factor in determining what happens to these rates is accident cost! Accidents occurring months apart in different communities eventually have their effect on the future rate of every sugar drink bottler in Texas. This is true regardless of the insur-

LIFTING LIKE THIS CAUSES INJURIES: This man is demonstrating the one greatest cause of muscular sprains and strains—lifting from a stooping position. He must put a 75-lb. strain on his back muscles for each 25 pounds that he tries to lift.

CORRECT WAY TO LIFT: He is playing safe by bending his knees, spreading his legs, and getting close to his load. With his back held straight, he will lift with the heavy, strong leg muscles instead of the weaker back muscles. Result: no strain.

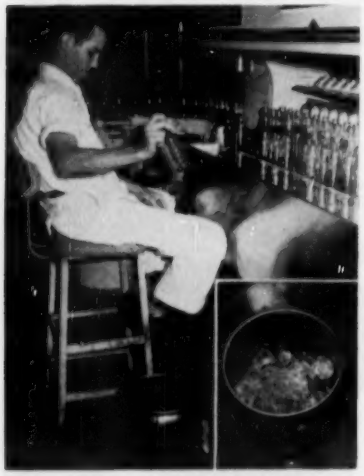
Chart 1: Types of Accidents in Bottling Plants

Accident Type	No.	Cost	% No.	% Cost	Av. Cost	Relative Cost
General Handling of Misc. Object ...	490	$37,640.70	54.1	51.0	$ 76.81	(4)
Struck by Flying Objects	181	5,412.13	20.0	7.3	29.90	(6)
Falls (on same level) and Slips .	66	5,724.48	7.3	7.8	86.73	(3)
Caught in Machinery	34	2,951.12	3.8	4.0	86.79	(2)
Burns	30	368.80	3.3	0.5	12.29	(9)
Using Hand Tools .	29	1,953.03	3.2	2.7	67.34	(5)
Falls from Heights	25	18,405.40	2.8	25.0	736.21	(1)
Harmful Substances	20	344.57	2.2	0.5	17.22	(8)
Motor Vehicles ...	14	369.35	1.5	0.5	26.38	(7)
Miscellaneous	16	483.40	1.8	0.7	30.21	...
Total	905	$73,652.98	100.0	100.0	$ 81.38	Average

IT HAPPENS EVERY DAY: In bottling plants and on city routes, the hurried handling of cases frequently produces this accident. Multiple hazards result. If the case doesn't fracture a toe, flying glass may injure the salesman's or someone else's eye. Needed here is safe-handling training, safety shoes and safety glasses.

every employer would like to have an effective means of preventing accidents. Some make very active and successful efforts in this direction. Others try just as hard, but seemingly have little success. And there are those who feel they just don't know where to start on any accident prevention program, and consequently never start at all. They are likely to correct only those hazards they see—when and if they see them. This is closing the gate after the horse is gone, if action is taken *after* the accident.

This analysis of bottling accidents does not pretend to reflect the particular accident problem in any one plant. It is felt, however, that the information presented here is a fairly accurate picture, a cross section of the accident trends and accident causes in the sugar drink bottling industry of Texas. It is hoped that one or more of the high lights in this study will crystallize for the reader some aspect of his own accident problem.



ASKING FOR TROUBLE: This washer operator is about to drop a defective bottle into the open container. The further breaking of the glass (inset) is sure to produce flying slivers, a threat to the eyes of the worker or other employees. Such disposal containers should have narrow necks, preferably with hinged covers opening downward; and goggles would be in order.

Check Employee Work Practices

It has been found that in the bottling industry, as in most industries, the greatest single hazard to a worker's safety is the worker himself. If you will look at Chart No. 1 you will see that more than half the number and cost of the accidents in this study involved employees who were handling objects which, in themselves, possessed no power of action. With only a few exceptions, each employee was in a position, or should have been in a position, to protect himself while carrying or stacking cases, rolling drums or while performing any of numerous other physical acts of labor. What happened to such employees is explained in Chart No. 2.

For example, those workers who inadvertently cut or puncture their hand and fingers on broken bottles and the like are always with us, or rather, with the bottling industry. The same is true of the fellow who drops a case of bottles on his foot or the man who fails to clear his hands from between two heavy boxes or drums. These are the "striking against," "struck by," and "caught between" accidents. Often these accidents are quite spectacular when

Chart 2: Accidents from General Handling of Miscellaneous Objects

A. Struck Self Against Object		
1. Broken Bottles	148	$ 5,051.70
2. Splinters, Tin, Wire, Nails, Bumping Against	75	1,090.99
Total	223	$ 6,142.69
B. Overexertions (Mostly Lifting Cases)	157	$19,920.04
C. Struck by Objects		
1. Cases of Bottles	36	$ 646.40
2. Coolers, Drums, Mach. Parts, Conveyor Sections, Etc.	20	3,311.16
3. Truck Hoods, Tail Gates	10	302.50
4. Lift and Hand Trucks	5	684.50
5. Verticle Sliding Bldg. Door	1	5,610.56
Total	72	$10,555.12
D. Caught Between Objects (Mostly "Pinch Points"—No Machinery)		
1. Cases, Drums, Boxes, Etc.	38	$ 1,022.85
General Handling Grand Total	490	$37,640.70

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Chart 3: Comparison of Handling Accidents for "Inside" and "Outside" Workers

	No.	Cost	Av. Cost	Relative Cost
Struck Self Against Object				
Inside	121	$ 4,785.69	$ 39.55	
Outside	102	1,357.00	13.30	
Total	223	$ 6,142.69	$ 27.54 Av.	(3)
Overexertions				
Inside	56	$ 7,476.58	$133.51	
Outside	101	12,443.46	123.20	
Total	157	$19,920.04	$126.87 Av.	(2)
Struck By Objects				
Inside	42	$ 2,055.17	$ 48.93	
Outside	30	8,499.95	283.33	
Total	72	$10,555.12	$146.59 Av.	(1)
Caught Between Objects				
Inside	23	$ 382.85	$ 16.64	
Outside	15	640.00	42.66	
Total	38	$ 1,022.85	$ 26.91 Av.	(4)
Total Inside	242	$14,700.29	$ 60.74	
Total Outside	248	22,940.41	92.50	
Grand Total	490	$37,640.70	$ 76.81 Av.	

accompanied by some unfortunate's anguished howl as he views a nasty looking wound or a curiously twisted arm. Seldom spectacular, however, and we emphasize this, are the "overexertions," those usually unseen muscular injuries which sometimes do not reveal their full severity until much later. Most of these could be called lifting accidents.

When the preceding group of accidents, general handling, was analyzed, the specific occupations of the injured were noted to find out the degree of involvement of "inside" and "outside" workers. Principally, of course, "outside" employees were driver-salesmen and helpers plus a few sign-erection men. "Inside" employees were all those whose ordinary duties restricted them to the plant or its premises, such as dock workers. How the two groups compare is shown in Chart No. 3.

This breakdown, abetted by the agents of injury and employee activities shown on Chart No. 2, reveals DEFINITE groups of workers who needed some accident prevention training in the avoidance of SPECIFIC hazards. For example, the 101 outside employees suffering overexertions (muscular injuries) were the most frequently injured from the standpoint of the most prevalent SINGLE cause of bottling accidents in this entire study. The lifting of some object, as stated earlier, was usually responsible for such injuries. In addition to safety training, it is also evident that the use of protective clothing, such as safety shoes, gloves, and safety goggles, would prevent much injury.

Over a period of time employers need planned and pertinent data on accidents; such information gives them something concrete, something they can put a finger on as to the nature of certain hazards and the employees injured because of them. You know, of course, why Charlie Jones got hurt last month, and why Red broke his finger yesterday, but do you know what relationship, what degree of importance these and other accidents have to one another and to your business? Maybe a lot of Charlie Joneses are getting hurt for the same basic cause. If you knew this, wouldn't you get the boys together and try to correct the trouble? That's what we mean by accident prevention, finding the *why*, the *who*, and *what to do!* Perhaps a suggestion would be appropriate at this point. If you feel you need or would like help, call on your insurance carrier's safety engineer. He's got a job to do, helping you prevent accidents.

LAZY MAN'S LOAD: Overloading a hand truck is hazardous. Should that extra case fall, exploding bottles and flying glass could cause injury to the salesman. In a crowded store the public would be endangered.

Chart 4: Accidents from Flying Objects (Mostly Eye Injuries)

A. Glass from Exploding Bottles		
1. Loading or Unloading Only	55	$ 3,874.50
2. Casing by Hand, Inspecting, Testing	48	718.47
3. Operating Bottling Machine	33	428 34
4. Others	2	16.00
Total	138	$ 5,037.31
B. Glass from Empty Bottles		
1. Miscellaneous Handling	10	$ 76.00
C. Metal Particles		
1. Hammering, Grinding, Sawing	16	$ 153.27
D. Dirt, Rust, Etc.	17	$ 145.57
Flying Objects Grand Total	181	$ 5,412.13

The emphasis placed (To page 62)

Off-the-Job Safety Programs

Set up calendar of topics to be discussed—just as in industrial program.

Letters to employees—to department heads.

Distribution of printed material—by hand—by rack service—take home material.

Display of materials—posters and exhibits.

Employee magazine articles.

Meetings — employees — family safety conferences—series of conferences.

Management participation in community safety activities.

Newspaper items—basis of discussions.

Records kept—Comparisons given—report forms for off-the-job accidents sent to interested officials.

Movies.

Safety Graphs.

N.S.C. has kits of materials on off-the-job safety.

PREVENT OFF-THE-JOB ACCIDENTS, TOO!

By THOMAS J. BERK *

Lost time, no matter the reason, is costly to industry.
There are twice as many off-the-job accident fatalities as industrial fatalities.
Therefore, the industrial safety engineer must direct some of his efforts to preventing accidents away from the job.

AS AN insurance carrier, my company is vitally interested in the safety of the individual, and this interest brought about a study on just what industrial firms were doing about off-the-job accidents. We sent letters to 400 companies. These companies formed a cross section of industry throughout the United States and Canada and were selected because they had assigned an individual safety director or safety engineer who was held responsible for accident prevention.

It developed that out of the 400 firms addressed, there were only 43 who *claimed* they were doing anything about off-the-job safety. Out of those 400 companies you can count on the fingers of your two hands the number of organizations who were *really* doing something to alert their employees to the dangers of accidents while away from work. There were eight.

This information is not being offered to encourage a feeling of complacency but rather as an indication that something will have to be done if the safety engineer is to hold his place in these United States.

When the problem of industrial accidents was first approached, it was frightening. The job looked almost too big to tackle. The work appeared so enormous that it was enough to make you want to quit. But nothing is too big for the safety engineer to tackle and best.

The proof of this is the fact that the National Safety Council reports

* The author is Assistant Director of Safety for a leading insurance company.

that since 1935–1939 era, through 1950, there has been a decrease of 29% in the frequency rate of occupational accidents. This is a tribute to the safety engineer's know-how, and is a consolation to us that he will lick the off-the-job accident problem too.

A great deal of publicity and interest has been created through the fact that a few months ago the millionth traffic death occurred. It has taken the motor vehicle 52 years to kill a million people. But in the 10 years between 1941 and 1950, there were 300,000 workers killed in off-the-job accidents. Simple arithmetic tells us that we have lost about two million workers during the same span of time.

These 300,000 workers killed represent the production of 1,000 plants each having 300 employees. These plants were not idle for a day, not idle for a year, but have been lost for eternity.

No Place for Smugness

It is evident that we must now change our approach to the solution of our accident problems. We will have to get out of our plants and into the streets, highways, and even into the homes, in order to do an effective job of accident reduction. Just as design engineers change their equipment and processes in order to keep up with the times; so the safety engineer, in order to do his job, will have to change his approach and accident prevention technique.

Paternalism has been the bugaboo in the off-the-job safety program. When we become realistic about the whole matter of accidents, wherever they occur, no one will resent the fact that someone is trying to keep him or his children from being injured.

All off-the-job safety programs will have a tremendous effect on the safe living habits of all members of the employees' families. Every person injured in the community is related to a worker, and because of this fact, the worker will accept the right kind of guidance and the right kind of education in safety.

Compare the "Off" & "On"

A safety man likes to show a good accident frequency experience. Would he be just as anxious to show the off-the-job accident experience and compare it with the good job he is doing within the plant? Some comparisons of industrial vs. off-the-job accidents might be enlightening. A firm in New Jersey, during the first six months of 1951, had industrial accidents that resulted in a lost time of 16 days. During the same period, off-the-job accidents resulted in a loss of 3,200 days. Where should the safety engineer of that firm direct his interest?

The national average is about one industrial to two after-work accident fatalities. This average runs through a gamut of 6 to 1 in a utility and 16 to 1 in a rubber company. Fatalities at work in many industries are no longer experienced. One company reports that while 14 of their employees were killed from off-the-job accidents during a four-year period, none were killed on the job while they were establishing 110,000,000 hours.

Those who have not already done so must change their viewpoint with respect to accident prevention. We will have to become more active in community projects that are designed to reduce accidents. Up to now, we have considered safety only as an established by-product of industrial procedures. From now on it will be an all day and night interest, and we will have to walk outside our plants and instill safety in the minds of everyone; not only in the minds of our present employees, but in the minds of potential employees as well. And when we say potential employees, we must not overlook the students in our schools.

True, our schools are doing a great deal more in accident prevention education than they ever did, but we will still hear the cry that there is not enough room in the curriculum. Our economic well-being in the years to come is dependent on the school child. Accordingly, safety and health must be accepted as a part of his daily life. Unless this attitude is properly placed in the children, an increasing number of persons will fill our graves and hospitals unnecessarily through accidents.

Accidents Will Cost More

The job we have before us in controlling accidents in and out of the plant is a big one. Let's not fool ourselves—the challenge (To page 52)

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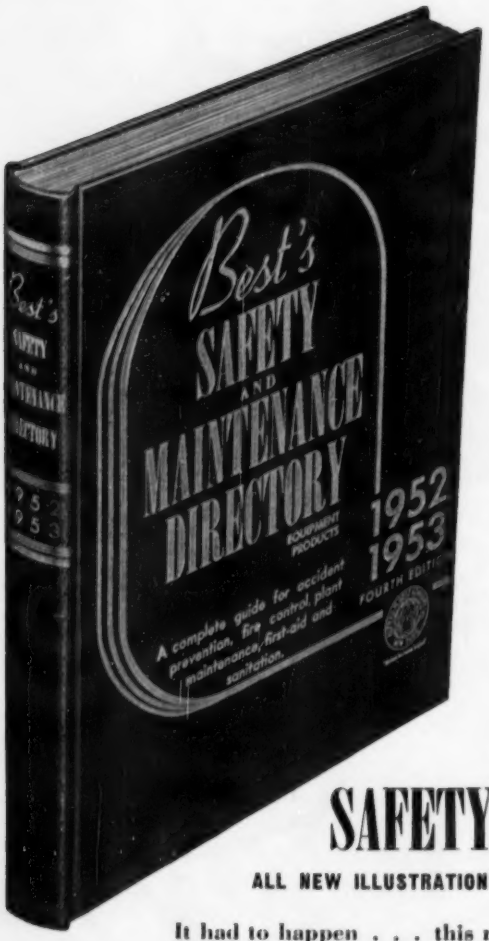

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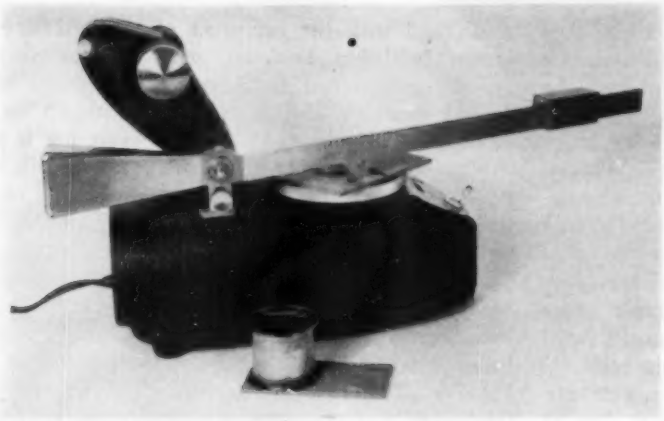

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SPILL-RESISTANT FLOORS

Tests conducted by the National Bureau of Standards indicate the resistance of various types of floor coverings to grease, oils and selected reagents.

THE effects of grease, oils, alkalies, acids, and bleaches on 40 floor coverings from 17 different manufacturers have been investigated by P. A. Sigler and T. H. Boone of the National Bureau of Standards. Conducted at the request of the Office of the Chief of Engineers, Department of the Army, the tests were made on coverings ranging from such general types as vinyl, rubber, linoleum, asphalt, and printed enamel to several patented or proprietary materials sold under trade names. The reagents to which these coverings were exposed included beef tallow, kerosene, cottonseed oil, lubricating oil, solutions of soap, sodium carbonate, trisodium phosphate, sodium hydroxide, acetic acid, sulfuric acid, and hydrogen peroxide.

As a standard testing technique for evaluating these properties was not available, a technique was devised which essentially measured the depth of a scratch caused by a "mechanical fingernail" after exposure of the material to the reagent for 24 hours. While this method has not as yet been thoroughly correlated with the scratch resistance of floor coverings in service, it has since been included in interim Federal Specifications for asphalt tile, No. SS-T-307 (GSA-FSS) of October 1, 1951.

In detail, the method involved the use of a Taber Abraser equipped with an attachment for measuring sheer hardness to determine the softening effect of the reagents on the various floor coverings. The coverings were prepared for testing by cementing the surface of a 2- by 4-inch specimen on one end of a hollow sheet-metal cylinder, 1½ inches in diameter. Ten milliliters of test reagent were poured into the cylinders, covered to retard evaporation, and allowed to stand for 24 hours. After the reagent and cylinder were removed from the specimen, the exposed surface was blotted lightly and examined visually for defects.

The specimen was then placed on the turntable of the Taber Abraser, and a 1-inch scratch made by means of a sharp-edged tool on a pivoted beam under a load of 500 grams. The tool was curved so that the scratch width was reasonably proportional to its depth. A scratch width of over 150 mils was considered to indicate a softening effect; a scratch width of between 100 and 150 mils, a slight softening effect; and a width below 100 mils, no softening effect.

Adverse Effects

Of the various floor coverings tested, the vinyl plastics were, in general, most resistant to grease and

oils. With a few exceptions, they also showed fair to good resistance to alkalies, while a number of the plastic floor coverings were adversely affected by dilute acids.

The regular asphalt tiles showed very poor resistance to most of the oils and only fair resistance to beef tallow. Some of the so-called "grease-resistant" asphalt tiles were not outstanding as regards grease and oil resistance, and most showed poor resistance to dilute acids.

All of the linoleums were materially affected by alkaline cleaning solutions and were partially disintegrated by a 1% solution of sodium hydroxide. They provided poor resistance to acids and hydrogen peroxide, and with the exception of brown battleship linoleum, were appreciably softened by kerosene. Several were also slightly softened by beef tallow.

None of the rubber tiles withstood the effects of kerosene but all were resistant to beef tallow. Their resistance to dilute acids and alkalies varied from good to poor.

In general, the enamel-print felt-base floorings were damaged by alkaline cleaners, dilute acids, and kerosene. The mastic (bituminous) felt-backed floor coverings provided poor resistance to kerosene and were slightly softened by beef tallow. A proprietary floor covering having a resin-composition wearing surface showed fair to good resistance to the various oils and reagents with the exceptions of kerosene and dilute acids. A cork-composition flooring gave fair to good resistance for the various oils and reagents with the exception of sodium hydroxide.

From an over-all viewpoint, the vinyl plastics tested possessed the best properties for use in locations likely to be subjected to frequent exposure to grease, oils, and alkalies. However, at least one of the vinyl plastic samples showed a poor resistance to five of the 10 reagents, and it is questionable if vinyl plastic floor coverings can be satisfactorily installed on concrete subfloors which are (To page 45)

Table 1

RESISTANCE OF FLOOR COVERINGS TO GREASE, OILS, AND REAGENTS

Code Letters: E—excellent, G—good, F—fair, P—poor.

Material	No. of Samples	Kerosene	Cottonseed Oil	Lubricating Oil	Beef Tallow	Cleaner: 0.5% Soap, 0.2% Na_2CO_3	Na_3PO_4 1%	NaOH 1%	Acetic Acid 5%	H_2SO_4 5%	H_2O_2 3%
Vinyl plastic, flexible	5	1-E 4-G	4-E 1-G	4-E 1-G	4-E 1-G	2-E 1-G 1-F 1-P 1-E	3-E 1-F 1-P 2-E	2-E 1-G 2-P 3-E	1-E 1-G 2-F 1-P 1-E	2-E 1-G 2-P 1-E	2-E 1-G 1-F 1-P 2-E
Vinyl plastic, felt-backed	3	3-E	1-E 2-G	3-E	3-E	2-G 2-E	1-G 1-E	1-E	2-F 2-E	2-G 2-E	1-G 2-E
Vinyl plastic, cork-backed	2	1-E 1-G	2-E	2-E	1-E 1-G	3-G	1-F 2-E	1-F 1-E	1-G	2-G	1-E
Vinyl plastic, semi-flexible	3	2-G 1-F	2-E 1-G	3-E	1-E 2-G		1-G	1-G 1-F	1-F 1-P	1-F	2-G
Asphalt tile, grease resistant	4	1-E 1-F 2-P	1-E 2-G 1-P	2-E 2-G	1-E 3-G	3-G 1-P	1-E 2-G 1-P	2-E 1-G 1-F	1-G 3-P	1-E 3-P	4-G
Asphalt tile, regular	7	7-P	7-P	2-E 1-G 1-F 3-P	1-G 6-F	5-G 2-F	6-E 1-G	3-E 4-G	4-G 1-F 2-P	1-G 3-F 3-P	3-E 4-G
Linoleum, felt-back	4	4-P	2-E 1-G 1-P	2-E 1-G 1-P	1-E 3-F	2-F 2-P	4-P	4-P	4-P	1-E 1-F 2-P	1-F 3-P
Linoleum, burlap-backed	2	2-G	2-E	2-E	2-E	2-F	1-F 1-P	2-P	1-F 1-P	1-E 1-G	2-F
Rubber	3	1-F 2-P	1-E 1-F 1-P	2-E 1-F	3-E	1-E 1-G 1-F	2-E 1-F	1-E 2-P	1-G 2-F	1-F 2-P	1-E 1-G 1-F
Enamel print, felt-backed	3	1-G 2-P	1-E 2-G	1-E 2-G	2-G 1-P	1-F 2-P	3-P	3-P	3-P	1-G 2-P	2-F 1-P
Mastic composition, felt-back	2	2-P	1-E 1-G	1-F 1-G	2-F	2-G	1-G 1-P	2-P	2-F	2-G	1-E 1-G
Resin composition felt-backed	1	P	G	E	E	F	E	F	P	P	G
Cork composition	1	G	E	E	E	G	G	P	F	E	G

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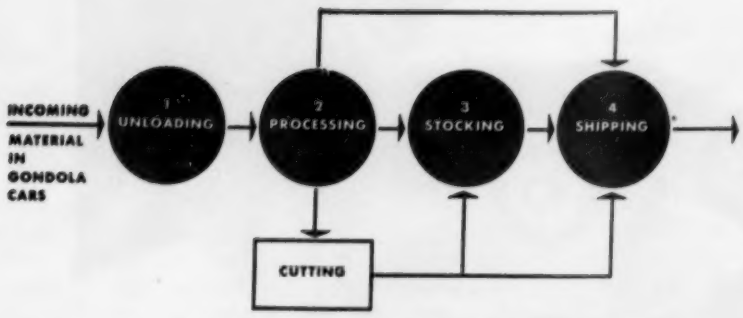

Fig. 1. Typical sequence of handling in a steel warehouse.

Safe Handling of Steel Stock

New Type Sling Simplifies Handling and Processing in Steel Warehousing Operations.

FEATURE

This is the second of a series of three feature articles on Materials Handling. The next article of the series will appear in the April issue of SAFETY MAINTENANCE & PRODUCTION.

ANY steel warehouse operator or plant maintenance man is familiar with the more traditional types of slings used for handling stock, machinery or parts in daily routine. These include wire rope slings, chain slings, hemp slings and canvas slings. Each has certain inherent advantages that make it more desirable than the others for specific types of handling.

Within the past year or so, however, a new type of sling, made from woven wire, promises to go far towards providing an all-purpose sling, one that may be used in a number of different ways for handling different types of material, from bars, shapes and tubing to heavy machine parts.

The versatility of the woven wire sling is the result of its unique construction. The body of the sling is broad and flat, thus providing a wide bearing surface for the load. It consists of lengths of spiraled wire joined together to form a mesh across the body of the sling. The length of the sling depends on the number of wire spirals, and the width is determined by the length of the wire spirals. The sling can, therefore, be manufactured in any width or length.

Because the spirals hinge across the width of the sling, the sling can bend completely around loads of small radius. This construction also minimizes the crushing effect of the sling's grip around the load.

The slings are provided with heat-treated steel handles attached to each end. These handles are of different sizes so that one can fit through the other to provide the user with a choke hitch around the load. When both handles are placed on the crane hook, the sling forms a basket hitch. Where maximum grip is desired, the choke hitch is recommended. Where maximum sling strength is desired, the basket hitch should be used. The safe working load for a given sling depends on its width and type of weave.

These are the construction details that make this new sling suitable for simplified, varied and safer handling. For concrete examples of its

Fig. 2. Woven wire sling is rigged in a choke hitch around a load of square stock.

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versatility, one could, by studying a typical steel warehouse, find several ways of using the equipment advantageously. Fig. 1 illustrates, in flow sheet form, the movement of material through a typical steel warehouse. The arrows indicate the direction of flow from one step to the next, although not necessarily the correct location of each step in an actual plant layout. The four circles indicate where woven wire slings can be used.

1. Unloading

Here woven wire slings are particularly efficient since one sling can be used for different types of loads. Rounds, flats, square or hexagonal bars can be handled in almost any length or weight. (See Fig. 2) Mixed loads can also be lifted with ease and safety. The broad, flat body of the sling prevents slipping, especially when the sling is rigged in a choke hitch.

2. Processing

The stock removed from gondola cars at the "Unloading" point can be carried to "Processing" in the very same sling. (See Fig. 3) After the bundles are broken, the sling is immediately available to move portions of the bundles either to stock racks or to the cutting table. Since woven wire slings will not kink or tangle, even after long use, they can be rigged around the load and removed from the load quickly and easily. In fact the removing of the sling from the load is almost automatic. The crane operator simply lowers the load to the floor until the sling is slack, then removes one handle from the hook, and raises the crane up again, pulling the sling from under the load. In the case of a choke hitch, the operator must unhook the sling, pull the small handle through the large one, rehook the sling and lift the hook.

3. Stocking

Woven wire slings can be used for moving single pieces or bundles into the stock racks. (See Fig. 4) Since the sling hinges across its width, it will bind tightly around small- or large-radius loads. For best results, the sling is approximately centered around the load to be stocked in the racks. The load is then lifted and moved as far into the rack as the sling will permit. Then the sling is moved back to the end of the load, thus providing both grip and leverage to shove the load the rest of the way into the rack.

Heavy loads will serve to tighten the sling if a choke hitch is used, thereby preventing inside members from slipping even if the load begins to rock slightly.

The all-metal construction of the sling is important because there is no danger that the sling will be cut in lifting sharp-edged flats. In addition, the metal mesh is not subject to permanent kinks where the sling bends around the sharp edge of the flat.

4. Shipping

Slings of woven wire can be used in two ways for removing stock from racks for shipping. When the stock is in the open top racks, the sling can be rigged under the load and attached to the crane hook in a basket hitch to lift the material up and out of the rack. Material stored in lower racks can be easily removed by simply reversing the procedure described above for "Stocking": flats, rounds or other shapes are pulled halfway from the rack by placing the sling around the ends protruding from the rack. When the load is halfway out, the sling is shifted to the approximate center and the load is pulled out completely. The load, furthermore, remains in the same sling for movement to the binding point.

At the binding point, a choke hitch should always be used so that the bundle is compressed together for secure binding. This will help prevent the slipping of inside members from the load during stop-and-go trucking through traffic.

Woven wire slings are particularly advantageous in handling bundles which may be hard to balance. The broad, flat body of the sling will grip the load tightly and prevent slipping even if one end is lower than the other.

Like any production tool, woven wire slings will wear out in time. However, their unique design provides long life because of the reduced flexure and strain on individual wires. Moreover, when the sling does begin to *(To page 46)*

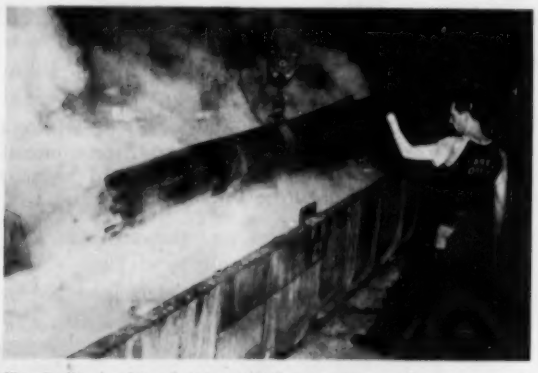


Fig. 3. Steel tubing being pickled to remove scale. Open mesh of the sling permits free drainage of process solution.

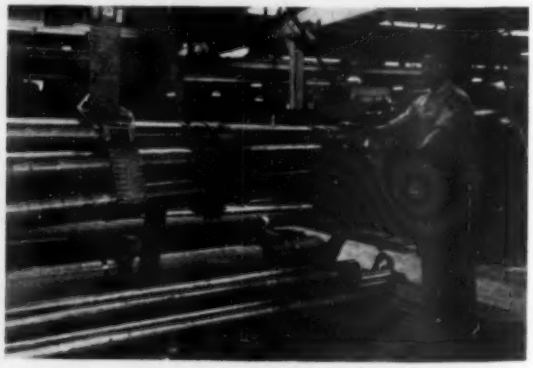
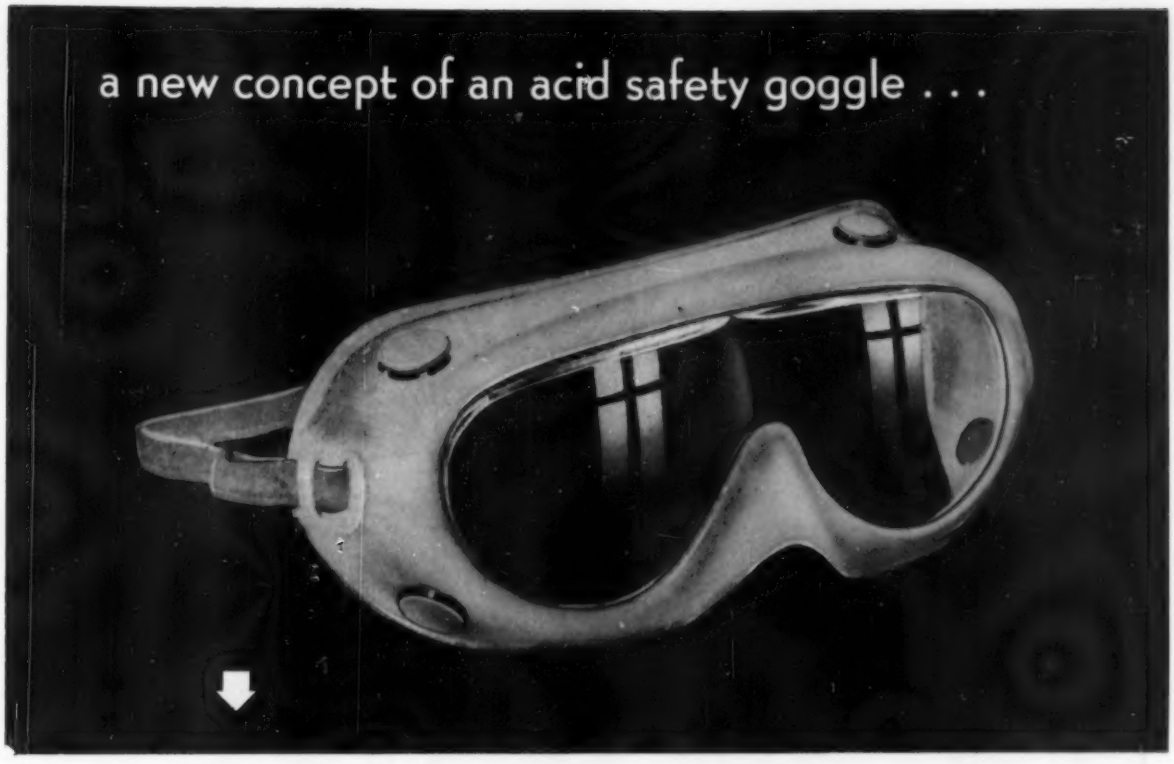


Fig. 4. Tube stock is easy to store in racks when rigged in woven wire sling. Choke hitch, used here, provides firm grip.

a new concept of an acid safety goggle . . .



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The S. S. "United States," the safest liner in the world, will soon be ready for transatlantic service.

THE average American abroad will bedevil European taxi-drivers to seek out an American soda fountain. The visitor audibly misses his American hamburger, malted milk and apple-pie, and bemoans the lack of American plumbing and dry martinis. He may blow his top searching for American conveniences, but will boast of taking a foreign ship to reach his destination! Perhaps that degree of inconsistency is part of our national heritage, or maybe we simply want others to play our way.

It is particularly appropriate therefore that United States "know-how," which has led the way in accident prevention and safety for more than 50 years, is preparing to place in the transatlantic run this summer the safest ship afloat.

We as vacationists or business travelers want speed, we want comfort, beauty and deft service, but above all we want reasonable assurance that we will arrive at our destination without harm. All those objectives are within grasp to a greater degree with the coming of the new superliner being rushed to completion by the United States Lines for service early in July.

Christened the S. S. United States," the vessel, now undergoing final fittings at the Newport News Shipbuilding & Dry Dock Company yard in Virginia, is the largest, fastest and safest ever built in this country. With accommodations for 2,000 passengers in three classes, the ship will be the world's most modern liner and will compete in speed with the fastest foreign flag ships now in service, being scheduled to make the crossing between New York and France in less than five days.

IT'S LUNCH TIME for the hundreds of workmen needed to put the finishing touches on the new liner, as it is readied for summer service.

U. S. Means Safety

It is in the field of safety, however, that the "United States" will

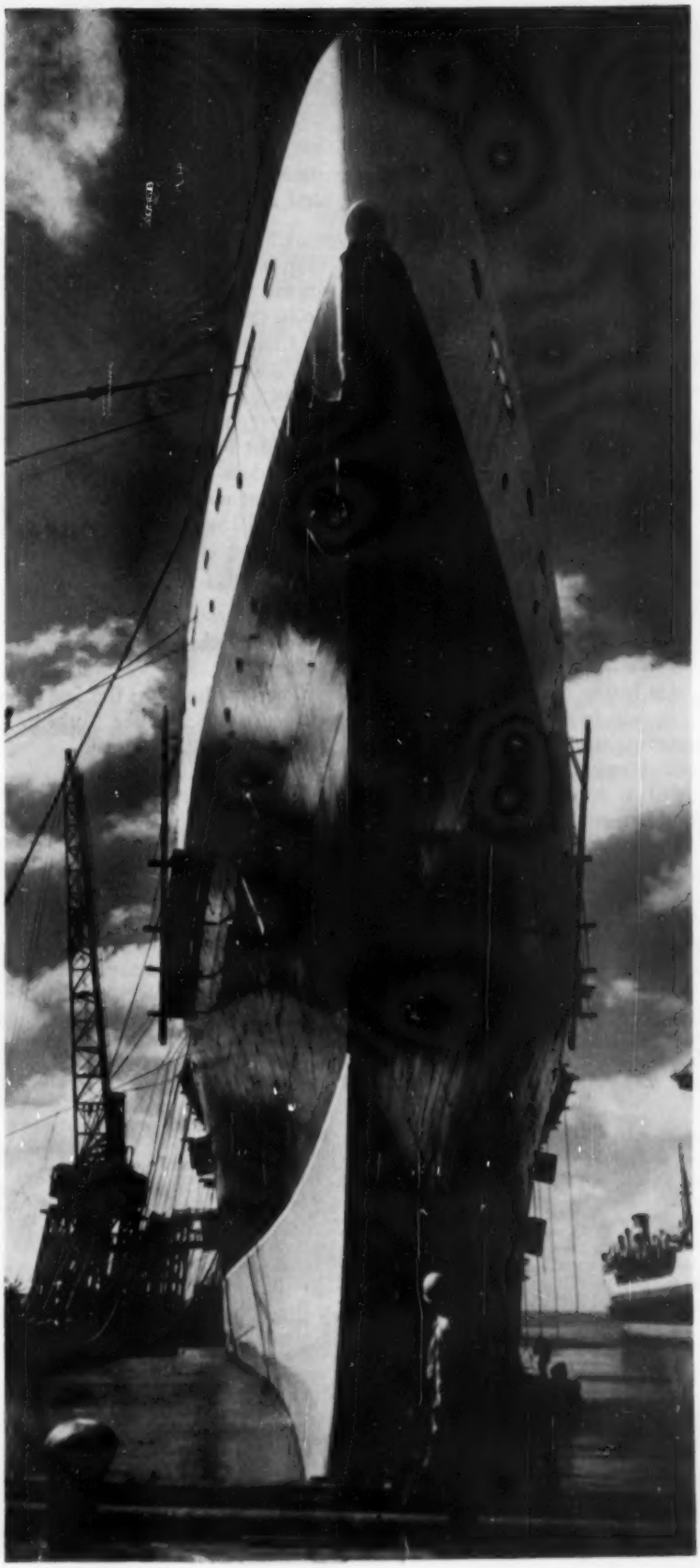
approach the ultimate in the first luxury passenger vessel built to U. S. Navy standards and specifications, the possibility of fire is remote. In fact the only wood in her construction is that used in the pianos and on the tops of the butchers' chopping blocks. Fireproof, fire-resistant and fire-retarding materials will be used throughout even to the stuffing and fabrics of the furnishings. It has been said that the only combustible items will be luggage and the passengers themselves!

In his comments concerning safety features at the launching of the S. S. "United States," Rear Admiral H. C. Shepheard, Chief, Office of Merchant Marine Safety, U. S. Coast Guard, reported that the ship will have the ability to withstand collision damage more than twice that required by international standards. While for security reasons it is not desirable to describe the subdivision of the ship in detail, Admiral Shepheard stated it approaches closely that of large combatant navy ships and thus provides a standard of safety unprecedented for a merchant ship. She will be fireproof to an incredible degree even though her fire extinguishing equipment is designed to prevent a catastrophe particularly in cargo space.

Unbelievably Fireproof

The first fully fireproof all-aluminum lifeboats are being built for the "United States." Their combined capacity totals over 3,000 persons. More aluminum has been used in the construction of the vessel than in any other single structure on land or sea to date. Over 1,000 steamer chairs have been constructed of aluminum, and other incombustible materials have been ordered for use on the twelve decks, while 6,000 pieces of fireproof furniture are being installed in cabins and public areas.

Indirectly at least, all 48 states of the Union have contributed to the construction of the "United States" which covers the length of about five city blocks. When completed the mammoth liner will be



as high as the average 12-story office building. If stood on end, the 990-foot vessel would tower 10 stories above the 70-story R.C.A. building in New York's Rockefeller Center.

Defense features designed and built into the ship accounted for more than a third of the total cost of more than $70,000,000. In the event of a national emergency, it is reported that the "United States" can be fitted quickly to transport 14,000 men or the equivalent of nearly a full army division. Many of its features are carefully guarded military secrets.

Completely Air Conditioned

According to its designers, the ship incorporates in its design the latest technological advances in machinery, fittings and hull construction to assure safety, speed, maneuverability and comfort whether used as a luxury liner or a troop carrier. She will be the first passenger liner of her size to be completely air conditioned in crew's quarters as well as throughout all passengers' accommodations.

Luxury and comfort undreamed of a few years ago have been built into the "United States" to kindle a glow of pride in the hearts of American travelers. The ship will have two ultra-modern theatres for use by all classes and is the first liner of her size to have a telephone in each stateroom of all three classes from which calls may be made ashore or to any other telephone on the ship.

A Monel-clad steel swimming pool has been fitted into place, and both incandescent and fluorescent direct and indirect lighting will be used.

All the paint to be used on the ship has been tested previously for its fire-retardant qualities. The paint to be tested is applied to the surface of thin metal strips heated by electric current to a temperature of about 2300 degrees, Fahrenheit. Ordinary paint bursts into flame as the heat increases but fire-retardant paint does not burn or start a fire. All paint used in the interior of the "United States" is fire-retardant. All draperies and curtains will be flameproofed.

Launched by Flotation

The superliner was the first major passenger vessel in the world to be launched by "floatation."

This unique launching procedure, used previously only for a few large naval vessels, called for the 990-foot ship to be floated in its building dock, a job that required more than two days' work by a regiment of shipyard workers, all of whom were surrounded with every conceivable safeguard against accident. In less than an hour the dock was flooded to a depth of 21 feet of water and shortly after, the vessel for the first time was afloat and completely waterborne.

At the launching, Major General J. M. Franklin, President, United States Lines Company, voiced the hope that a great ship carrying our flag and bearing the name of our nation would be operated in peace throughout her career across the North Atlantic, with success and credit to the government, her owners and the American Merchant Marine.

The maiden voyage of the U. S. Lines operated "United States" is set for July 3rd from New York. Thus, on the eve of the nation's birthday, the proudest vessel to bear our flag will take her place as safety's standard bearer on the high seas.

H. A.

THE LARGEST STEAMSHIP STACK IN THE WORLD: One of the two stacks for America's greatest liner is shown on the dock before it was placed aboard the United States by two giant cranes. Each of the funnels is made of aluminum and is more than 55 feet high and will be lifted aboard in two horizontal sections.

Radio in Civil Defense

RADIO communications play a vital role daily in the lives of all Americans. However, the operations and importance of this electronic "tool," which has now added civil defense to its broad field of applications, are little understood or appreciated by the public.

General Electric, through the use of a new motion picture titled "And a Voice Shall Be Heard," dramatizes the subject in a 22-minute documentary film made by the March of Time.

Various media which keep the American people the best informed in the world are woven into the film as it follows an average family and the community life of Syracuse, N. Y., through a typical day. The movie reaches its climax with a simulated atom bomb attack on Syracuse, and records the working of an emergency radio communications system used to direct rescue and other operations in the "disaster" area.

The movie is being shown to various civic organizations and professional groups throughout the country by representatives of the G-E Electronics Division.

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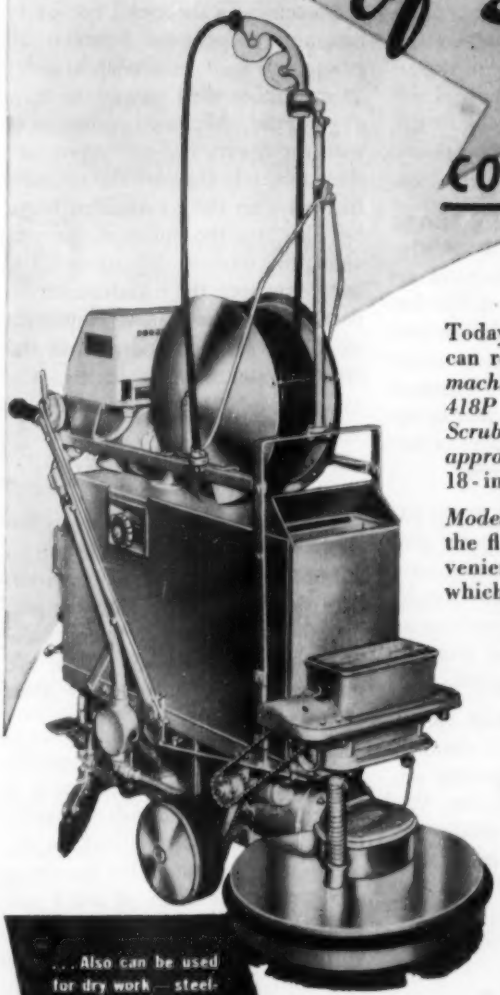

...Also can be used for dry work — steel-wooling, et cetera

Today, even buildings with but 2,000 to 15,000 sq. ft. of floor space can reap the labor-saving, cost-reducing benefits of *combination-machine-scrubbing.* Here's a *Combination Scrubber-Vac, Model 418P* at left, that's specially designed for such buildings. This *Scrubber-Vac,* which has an 18-inch brush ring, cleans floors in *approximately one-third the time* required with a conventional 18-inch machine and separate vac unit.

Model 418P applies the cleanser, scrubs, and picks up (damp-dries the floor) — *all in one operation!* Maintenance men like the convenience of working with this single unit... the thoroughness with which it cleans... and the features that make the machine simple to operate. It's *self-propelled,* and has a *positive* clutch. There are no switches to set for *fast* or *slow*—slight pressure of the hand on clutch lever adjusts speed to desired rate. The powerful vac performs efficiently and quietly. (Powder dispenser is optional.) Compactly built, the *418P* also serves advantageously in larger buildings for the care of floors in narrow aisles and congested areas.

Finnell makes *Scrubber-Vac Machines* for small, vast, and intermediate operations, and in *self-powered* as well as *electric* models. From this complete line, you can choose the size and model that's exactly right for *your* job (no need to *over-buy* or *under-buy*). It's also good to know that you can lease or purchase a *Scrubber-Vac,* and that *there's a Finnell man nearby* to help train your maintenance operators in the proper use of the machine and to make periodic check-ups. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 4103 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

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No Excuse for Eye Accidents

★

Cooperation is the key to a successful eye safety program, and this key opens the way to the elimination of eye losses and injuries.

By HERMAN SAGER, Optometrist
Supervisor Eye Safety
Sperry Gyroscope Company, Inc.
Great Neck, L. I., N. Y.

THERE is no reason why an employee today should be subjected to the possibility of blindness as the result of an industrial eye accident. Eye losses in industry can be almost completely eradicated by the institution of a program for the prevention of blindness rather than a program of post-accident treatment. This statement is made on the basis of the results experienced by the Eye Protective-Corrective Program at the Sperry Gyroscope Company.

In 1943, during a nine month period from January through August, a total of six eyes were lost and fifty-six serious eye injuries were reported, many resulting in partial loss of sight.

This unnecessary and frightful loss of sight entailed an expenditure of over $200,000 in direct and indirect costs and approximately 700 work days were lost.

Alert management immediately realized that something had to be done about this appalling situation and in 1944 an Eye Safety Program was established. Since its inception, we can proudly state that not one eye has been lost in our machine shops and foundry and not one serious eye injury has occurred resulting in the partial loss of sight.

During seven years of the program, we accumulated seventy-two pairs of smashed safety glasses all of which might also have resulted in a potential eye loss. There probably have also been numerous unreported cases where the impact of a foreign body might have been enough to damage severely an unprotected eye, but was not severe enough to damage the safety lens.

In 1944, Dr. L. H. Whitney, former Medical Director of the Sperry Gyroscope Company, in an article entitled, "Industrial Eye Injuries," commenting on the realistic approach of management in establishing the Eye Safety Program stated, "This program is still in its infancy. We have high hopes of the efficacy of such an approach."

I believe our eye safety record today truly bears out his hopeful prediction. This successful experience in eye safety at our company should be sufficient proof that blindness as the result of an industrial accident can be completely eliminated.

It is especially important today, when we are facing a grave national emergency, that the employees are made 100% safe at their jobs. We cannot afford to have our productive effort hampered by unnecessary accidents.

FEATURE

This is the first of three feature articles concerned with Eye Protection. The next two articles of the series will be published in the April & May issues of SAFETY MAINTENANCE & PRODUCTION.

To achieve a successful eye safety program, cooperation between all groups and agencies is vital, in order to contribute their utmost to such a program. My own experiences with the Sperry eye safety program show not only the part the optometrist plays on the coordinated team, but also how the duties of management, the medical department, the safety engineer, the maintenance department, foremen and employees are all inter-related and vital to the program's success.

Good Vision Necessary

The employee whose vision is impaired is a hazard to himself and to his fellow employees. Good vision also means better efficiency of production. In view of this the optometrist, since the inception of our eye program, has refracted more than 18,000 employees.

To properly refract these employees, the optometrist had to make a careful survey of the job demands. Each job classification and its demands on the vision of the employee was studied. Factors of work distance, illumination, eye movements, height of machines, position of employee at jobs, color requirements, etc. were all carefully noted.

After a thorough study of the job, such as described, the optometrist was better able to provide a prescription that was suitable for the employee at his job. There would be no value in prescribing glasses for an employee for reading at 16 inches

if his job required a focusing distance of 10 inches.

During the war, an employee who was transferred from the day shift to the night shift began to experience uncomfortable symptoms at his job. This, in all probability, was due to the readjustment he had to make. When his eyes were refracted by an outside practitioner, he was told that the lighting used at night was probably the cause of his complaints and therefore prescribed dark tinted glasses. Little did this practitioner know that the lighting conditions at our plant during the war was the same during the day as it was at night because all the windows were blacked out. This is an example of how important it is to thoroughly investigate the work conditions in order to prescribe properly for an employee.

In order to ascertain the employees who had the necessary vision for their jobs, 25,000 vision screening tests have been performed by the vision technician and analyzed by the optometrist. As a result of these tests approximately 40% required new prescriptions.

In regard to protection, 25,000 pairs of safety glasses, both plain and prescription, have been dispensed by the optometrist.

In cooperation with our consulting ophthalmologists, innumerable cases of eye pathology ranging from conjunctivitus to glaucoma have been discovered and properly treated. A program cannot be successful without this service.

Medical Department

The Eye Service at Sperry is part of the Medical Department. The optometrist reports to the medical director. In cooperation with the Medical Director all problems relating to Eye Service policy are discussed. Some of these problems may involve discussion with top management.

Cooperation between the optometrist and Medical Department is beyond reproach. Frequently consultations between the optometrist and the staff physicians will be held in cases where the employee's complaint symptoms may be relative to the eyes. Furthermore, the plant nursing staff is thoroughly acquainted with the duties of the optometrist.

Aid From Safety Engineer

In cooperation with the Safety Engineering Department, the optometrist and the safety engineer made a thorough study of the hazards of each job and decided what type of safety eye protection would be required. We have as many as twenty different types of safety glasses and shields that are in use on the various jobs throughout the plant.

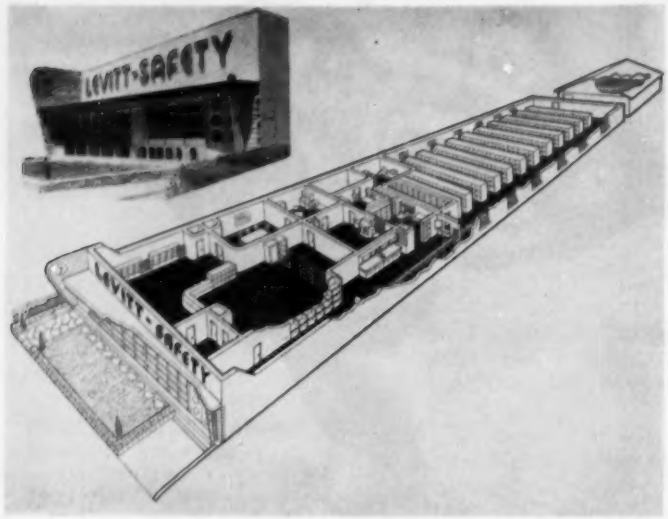
Educational safety programs are continually carried on. Posters stressing eye safety can be seen on bulletin boards throughout the plant. Large display boards containing our smashed safety glasses with each individual story of the accident are displayed in the cafeteria and main corridors where all the employees can see them.

In cooperation with the editor of the plant newspaper, and the safety engineer, the optometrist sees to it that the story of all eye accidents are published, including a picture of the employee wearing his smashed safety glasses.

Union cooperation is vital. The optometrist and the medical director must acquaint the union representatives with the objectives and methods of the program.

Cooperation of the supervisory personnel, such as foremen and department heads, is necessary to carry out the enforcement of eye safety

(Continued on page 58)



A birdseye view of the Levitt-Safety Centre showing the modern showroom, general office, training room, nucleonics lab, service department and warehouse.

INDUSTRIAL SAFETY: A GOLDEN ANNIVERSARY

The supply house carries a complete line of protective equipment for welders: gloves, helmets, aprons, sleeves, electrode holders.

Our Canadian neighbors are fortunate in having a service that keeps abreast of the latest developments in safety.

A Golden Anniversary is a momentous event.

Today, all over the continent, labor and management are both celebrating a Golden Jubilee—fifty years of organized Industrial Safety. The progress made in this important field in so short a time is staggering enough to merit setting down in detail.

Fifty years ago there was no organized safety movement. Workers labored amidst conditions that earned the name "sweat shops" for most factories. The toll of lost lives and maimed bodies from fires, explosions, severed limbs and blinded eyes was enormous.

Canadian industry today salutes those organizations who have made safety-consciousness an integral part of labor conditions. The Workmen's Compensation Boards, Provincial Department of Labor, Industrial Accident Prevention Associations and plant safety engineers, all

This crash fire truck has been purchased by the Royal Canadian Air Force. It carries 4,000 lbs. of dry chemical and furnishes excellent extinguishing capacity even in sub zero temperatures.

The dry powder extinguisher for burning metal fires makes the old dangerous method of shovelling the compound obsolete and it is great reduction in the hazard of fighting magnesium fires.

have pioneered accident prevention.

Working side by side with these organizations are the safety-equipment houses whose persistent efforts in selling safety to industry are to a great degree responsible for the average worker living out his life whole and healthy.

One of the pioneers in the safety equipment field is the firm of Levitt-Safety Limited. The history of this firm parallels closely the most rapid advancement made in industrial safety.

To say that Levitt-Safety sells safety equipment to industry is, however, an understatement. Because their lives are dedicated to the theme that "People Must Have Safety When They Want It," the brothers Vic and Walt Levitt have pioneered a two-man enterprise into an organization of tremendous scope and importance.

The present headquarters of Levitt-Safety is a modern, smart-looking, one-story building at 747 Vaughan Road, several miles removed from the busy central section of Toronto. In its 10,000 square feet of space are concentrated, offices, show-rooms, a Safety Training Room with the most up-to-date of visual aids, First Aid Room, Laboratory, a Nucleonics Department and a completely equipped stockroom with over 8,000 square feet of shelving that contain more than 1,000 diverse safety items.

Levitt-Safety takes pride in being able to supply the industrial safety field with anything from safety pins to locomotive re-railers. Recently this firm supplied the Canadian Government with mammoth 7-ton Dry Chemical Fire Fighting Installations for the RCAF, to be used in rescuing trapped personnel from burning aircraft. Since fire prevention is the constant concern of everyone connected with aircraft, these installations are heralded as real life-savers.

Levitt-Safety pioneered the industrial safety field in Toronto back in December 1935 with U. S. Bureau of Mines approved dust respirators. The following year the firm had

(Continued on page 42)

"We all feel safer since our Safety Director SPECIFIED Scott Air-Paks"

TRADE MARK

★ Yes, SCOTT AIR-PAKS give employees working in hazardous fumes complete breathing protection, enabling maintenance and repair jobs to be completed quicker and easier. Men wearing safe, efficient SCOTT AIR-PAKS under such conditions work with confidence because they know they will get all the fresh, cool air they want, no matter how hard they work. Extremely low in operating costs, simple to use and fast in action, Scott Air-Paks insure greater economies in your plant.

Write for Bulletin No. 510 showing all models or call in your Safety Equipment Dealer today!

Thousands of SCOTT AIR-PAKS are helping to make hard jobs easier and safer, throughout the Nation's industries.

ESTABLISHED IN 1932 Scott FOR SAFETY—FOR SERVICE

SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

217 ERIE ST., LANCASTER, N. Y.

CANADA: SAFETY SUPPLY CO., TORONTO — BRANCHES IN ALL PRINCIPAL CITIES

EXPORT: SOUTHERN OXYGEN CO., 157 Chambers Street, New York 7, N. Y.

In *TOE SAFETY...* it's the INSIDE

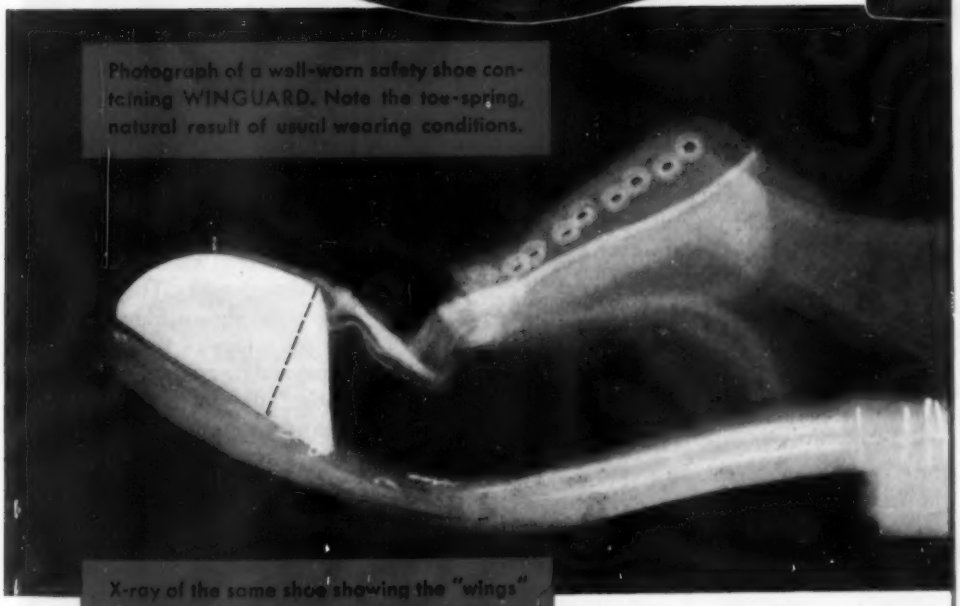
We concede that no safety box toe can be made regardless of its basic steel, its gauge, or its profile that can not be collapsed by unusually extreme striking force. As we see it, the job of a steel safety box toe is to reduce as far as possible the potential of the accident — to be so protective as to cause an important percentage of amputations to become fractures, and fracture cases to become abrasions, and in innumerable instances of lesser accident save the wearer from as much as a bruise. Since the best steels are already in use and since increased gauge means wearer discomfort from weight, only architectural improvement can make steel toes safer. Toes that resist back-tipping — that buttress the toe dome under extreme toe-spring — that present greater bearing surface against the shoe upper in resisting lateral spreading — may well mean the difference between minor and serious injury to the wearer. Such toes are available to your safety shoe supplier. They are known as WINGUARDS.

400
FOR SAFETY DRESS SHOES

500
FOR SAFETY WORK SHOES

story that counts

Photograph of a well-worn safety shoe containing WINGUARD. Note the toe-spring, natural result of usual wearing conditions.



X-ray of the same shoe showing the "wings" of WINGUARD still fully supporting the toe dome. Dotted line indicates the back edge position of non-wing types after toe-spring has forced the dome area to overhang the toe members.

WINGUARDS

safest steel box toes

SAFETY SHOE MANUFACTURERS LICENSED TO USE WINGUARD STEEL SAFETY BOX TOES

as of Jan. 1, 1952

UNITED STATES

Allen-Squire Co.
Spencer, Mass.

G. H. Bass & Co.
Wilton, Maine

Belleville Shoe Mfg. Co.
Belleville, Illinois

Curtis Shoe Co., Inc.
Marlboro, Mass.

Charles A. Eaton Co.
Brockton, Mass.

Endicott Johnson Corp.
Endicott, N. Y.

General Shoe Corp.
Nashville, Tenn.

Georgia Shoe Mfg. Co.
Buford, Georgia

Joseph M. Herman Shoe Co.
Millis, Mass.

Hill Bros. Co.
Hudson, Mass.

Holland-Racine Shoes, Inc.
Holland, Michigan

International Shoe Co.
St. Louis, Missouri
Iron Age Division
H. Childs & Co., Inc.
Pittsburgh, Penn.

Knapp Bros. Shoe Mfg. Corp.
Brockton, Mass.

Leverenz Shoe Co.
Sheboygan, Wisconsin

J. F. McElwain Co.
Nashua, N. H.

Milwaukee Shoe Co.
Milwaukee, Wisconsin

Mussbach Shoe Co.
Oconomowoc, Wisconsin

A. H. Weinbrenner Co.
Milwaukee, Wisconsin

Wolverine Shoe & Tanning Corp.
Rockford, Michigan

CANADA

J. A. Blais, Inc.
St. Casaire, P. Q.

G. A. Boulet, Limited
St. Tite, P. Q.

Canada West Shoe Mfg. Co., Ltd.
Winnipeg, Manitoba

J. A. & M. Cote, Ltd.
St. Hyacinthe, P.Q.

Doucet, Lalonde, Inc.
Montreal, P. Q.

Frontenac Shoe Ltd.
Quebec City, P. Q.

The G and B Shoe Co.
Campbellford, Ont.

Grob Shoe Co., Ltd.
Kitchener, Ontario

Hydro City Shoe Mfrs. Ltd.
Kitchener, Ontario

Palmer-McLellan Shoe Co., Ltd.
Fredericton, N. B.

The T. Sisman Shoe Co., Ltd.
Aurora, Ontario

The Steg Shoe Co., Ltd.
Montreal, P. Q.

Sterling Bros., Limited
London, Ontario

Totrault Shoe Ltd.
Montreal, P. Q.

The Tillsonburg Shoe Co.
Tillsonburg, Ontario

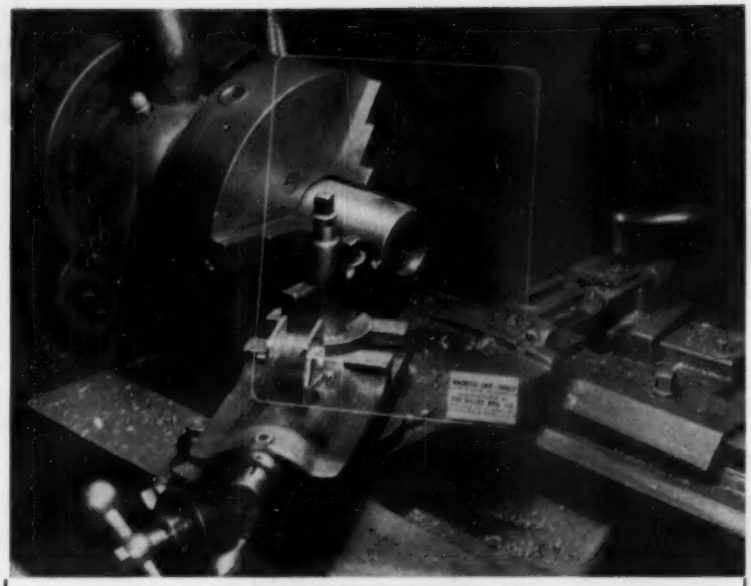
Underhills' Limited
Barrie, Ontario

Valentine & Martin Ltd.
Kitchener, Ontario

Williams Shoe Ltd.
Brampton, Ontario

SAFETY BOX TOE COMPANY
812 Statler Office Building
Boston 16, Massachusetts

subsidiary of
Beckwith Manufacturing Company,
Dover, N. H., sales agents for the
United States. Canadian sales agents:
Beckwith Box Toe Ltd., Sherbrooke, P.Q.



(Magnetic Grip-Shield on lathe—USPat. 2,401,056)

Attract the profits by putting *Magnetism* into your *Safety Program.*

***Safety* and *Tool* Engineers in the plants of our hosts of satisfied customers know from experience that the *Magnetic Grip-Shield* pays for itself quickly. Just GRIP-IT to any machine.**

Write

THE DILLEY MANUFACTURING COMPANY

1651 Ansel Rd. Cleveland 6, Ohio, U.S.A.

branched out and was covering the entire province.

In 1943 the firm moved to its own 3-story building on Yonge Street. The following year saw the opening of a Montreal branch office and warehouse.

The rapid growth of the organization is attributed for the most part to the pioneering spirit of the safety minded Levitts. Vic and Walt championed in Canada the use of approved respirators, plastic eye protections, dry chemical fire fighting apparatus, oil-resistant gloves, interlocking power and press guards. In 1940, on a trip through one of this country's important shipyards, Vic Levitt was amazed to hear of night watchmen making their rounds with the aid of ordinary coal-oil lanterns. The thought that such a highly flammable location could be easily imperiled by burning coal-oil, resulted in the introduction of electric lanterns for watchmen in war plants and other important areas.

Few people are actually aware of the rapid improvement in safety and accident prevention equipment during the past 50 years.

A trip through the Levitt-Safety Centre reveals a variety of devices—all designed to increase production safely and representing the tremendous strides accomplished in modern accident prevention.

A striking example of this progress can be seen in welders' eye protection. The usual type welding lens is now being replaced by a special welding lens, whose outside surface is mirror-clad with stainless steel to reflect the harmful light rays, instead of absorbing them. This assures increased visibility for the welder, less fatigue and fewer accidents on the job.

Hazardous metal fires such as sodium, potassium, magnesium, zinc, etc., are now more easily overcome with a new dry powder extinguisher. Where formerly the extinguishing agent was shovelled onto the burning metal at dangerously close quarters this free-flowing powder applied from gas pressure type extinguishers enables the operator to stand well back from the source of the fire and to direct the stream accurately so that it quickly fuses and forms an air-excluding crust over the burning metal.

Another boon to the armed forces is the low temperature dry chemical fire extinguisher, tested and approved for operation at temperatures as low as 65 degrees (F) below zero.

Other miracles of modern industrial research are the protective creams for the prevention of acid and chemical burns, as well as for protection against industrial dermatitis. At the Safety Centre there is a cream for almost every skin hazard. One particular cream is now widely used by beauty shops for hand protection during permanent waving.

Abreast of the Times

One of the unique developments of the company is the Safety Training Room with its facilities for silent and sound movies, film strips, blackboards and other visual aids. It is here that the Levitt staff is briefed in the latest safety developments. Groups interested in safety and fire protection are offered all the facilities of this department. They are given chalk talks, shown films and then taken on a tour of the plant. This is an interesting contrast to the usually static "talk" method of instilling safety-consciousness.

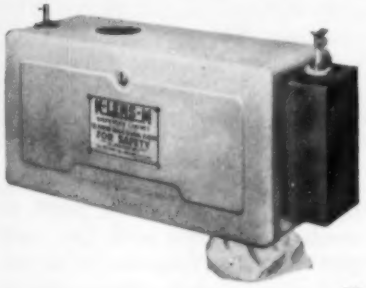
To keep abreast with current developments in the atomic field, Levitt-Safety has established its own "Nucleonics Division" where applications for the use of radioactive isotopes for industry are tested and developed. It is intended that all discoveries in this field will be transmitted for possible use by Canadian industry.

With its motto "Safety Round The Clock" Levitt-Safety has developed a two man operation into a safety-conscious company which is helping to reduce accidents and loss of life in Canadian industry.

Picture credits: Two pictures at top—Levitt-Safety Appliances Co.; Two pictures at bottom—Ansul Chemical Co.

K-LENS-M
REG. U.S. PAT. OFF.
Anti-Fogging LIQUID

Stops fogging and steaming of eyeglasses and goggles—glass or plastic. Easily applied, K-LENS-M Anti-Fogging Liquid forms an invisible coating that resists formation of fog or moisture on lens surfaces . . . brings clear vision to eyeglass wearers under severe conditions of hot steaming vapors, freezing temperatures, humid summer heat, or body perspiration . . . overcomes hazards of fogged goggles . . . increases worker efficiency and safety.



ANTI-FOGGING STATION
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FINGERTIP SPRAY PUMP
(No Air Pressure Needed)

EASILY INSTALLED—SERVICED
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Make your own test—
Send for FREE Sample

Manufacturers of K-LENS-M

Liquid Lens Cleaner
Lint-Free Lens Tissues
Anti-Fogging Liquid
Dispenser Cabinets
Anti-Fogging Station

THE WILKINS CO.
INCORPORATED
CORTLAND 2, N. Y.

Visit Booth 57—Greater New York Safety Exhibit

Inter-Plant Safety Contest

AN ANNUAL inter-plant safety contest has been established by Celanese Corporation of America to bring about the best possible operating conditions and an alert attitude to the dangers of accidents and fires. The Harold Blancke Award will be given to the plant or laboratory which has accomplished the most outstanding performance in accident and fire prevention.

Each of the thirteen domestic plant and research laboratories of the company will be assigned to one of four divisions: yarn manufacturing; weaving and knitting; chemical and plastics; and research. The President's Certificate of Commendation will be awarded to the winning plant in each division, and such plants become eligible for consideration for award.

The American Standard Method of Compiling Industrial Injury Rates will be used to determine classification of reportable injuries, and frequency rates and severity rates will be developed in conformity with this code.

Safety Awards

MONSANTO Chemical Company announced that its plants at Nitro, W. Va., and Trenton, Mich., were the winners of the President's Trophies in the company's annual safety competition for 1951.

Dr. Charles Allen Thomas, president, said that both of the plants operated during 1951 with no lost-time accidents. Currently, the Nitro plant, which employs more than 850 persons, has an accident-free record of more than three million man-hours, and the Trenton plant, with more than 400 employees, has a record of over one million accident-free man-hours.

The President's Trophy, which will be presented later in the year with ceremonies at each of the plants, is awarded each year to the plant with the best safety record.

James A. Purdy

ANNOUNCEMENT is made by Michigan Mutual Insurance Company of Detroit that James A. Purdy, Vice President and Director of the Safety Engineering Department of that organization died suddenly following a heart attack early in February.

For many years Mr. Purdy was recognized as an ardent exponent of the entire safety movement who lent his unfailing support to the cause of accident prevention in its many phases. He contributed greatly of his time and effort in the crusade for the reduction of losses arising out of preventable accidents and injuries in all lines of industry and his great influence in that direction will be missed by a host of business and personal associates.

Janikov is a watchman

at the Acme plant. Janikov loves weekends—because he knows nobody bothers him on Saturday and Sunday.

Sure, the boss is supposed to send someone over to change the dial in his watchclock—but, in violation of insurance regulations, they leave this function to him—and Janikov knows a trick or two. Besides, the boiler room is a pretty comfortable place to sleep in.

If Janikov is a weekend groundhog, his boss is an ostrich executive, taking needless risks with the safety of the firm. The records are full of disasters, resulting from the negligence of unsupervised Watchmen.

The DETEX GUARDSMAN Watchclock was designed to solve just this problem. It keeps an eye on your Watchman on weekends, as well as during the week, giving you a minute-by-minute record of his activities. It operates on continuous roll tape for as long as 96 hours, if need be, without the necessity of someone cutting the tape.

Don't let a groundhog Watchman run your life's business into the ground. Depend on the dependable GUARDSMAN. Write for free descriptive folder today.

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PATROL
ALERT
ECO
NEWMAN
GUARDSMAN

WATCHMENS CLOCKS

DETEX WATCHCLOCK CORPORATION
Dept. S-3
76 VARICK STREET, NEW YORK 13, N.Y.
Sales and Service in All Principal Cities

The Accident that Didn't Happen

By CHARLES F. MAHONEY, Safety Engineer
Safety & Claims Service, Inc.
Chicago, Illinois

THE cable snaps—the crane load drops—a man is crushed. Here is a violent, heartbreaking accident, the type of story that might be exploited by the tabloids with gruesome pictures. It is a morbid melodrama in which people are only victims, while the real story is about the broken cable.

In contrast to this, there is another type of story, less sensational, but more truly dramatic. It has to do with the cable that didn't snap and the load that didn't drop. Here, the real story is about people rather than things—about someone who had checked the crane very carefully and had changed the worn cable before anyone was injured.

At first glance, the no-accident story may seem lacking in dramatic values. It has no action, no violence. But the drama is there, for accident prevention is essentially a human interest story. Look at the many successful books, plays, movies and radio scripts that have been based on the drama inherent in the deaths that didn't occur, the disease that was checked and finally defeated, and the work of researchers and crusaders whose aim has been the alleviation of suffering. Perhaps what the safety movement needs is an equally imaginative approach—to emphasize through human interest the importance of accident prevention.

In industry, safety is often regarded as something to be accepted prosaically. To be sure, top management agrees that safety is important, the busy plant manager is all for safety too, and so are the superintendent, the foreman, and the employee. But too often, the attitude of all these people is merely dutiful recognition, a salve for their collective conscience, an easily given concession that they want a safe plant and a good safety record—without too much effort.

Unfortunately, this is the attitude the safety engineer encounters all too frequently. To overcome this lethargy, he has to devise ways of arousing active interest in the plant safety program, usually with limited, or at best, temporary success.

However, the human interest aspect, or even, if one prefers, the "romance" of safety has not been exploited. And safety is an adventure story! It is not just an occupational duty, nor a drab but necessary part of plant life and activities.

There are many ways of finding the vivid and stimulating point to accident prevention work. One need only ask what contribution industrial safety made to the success of the Allied Forces in the late war. The answer is—and there is nothing drab about it—that safety committees and safety activities paid off in production records that astounded the world. The immensity of the production effort of this country was incredible, and accident prevention played its part in that emergency. This country and its allies owe a great deal to the safety engineer who was the man beside the man behind the man behind the gun.

The In-Plant Story

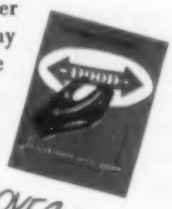
Another approach is the effect of safety on human relationships within the plant. The fact can be highlighted that a plant safety program is one thing on which management and the union agree. Both sides are frankly and sincerely interested in the safety of the employees. The good will and cooperation built up in the effort to maintain a successful program frequently carries over to other contro-

HOOD "pressure vulcanization" assures safer, longer lasting GLOVES

Hood's scientific method of "pressure vulcanization" is a special process where extremely high, controlled heat unites fabric liners with latex film, creating an almost inseparable bond. The latex film is actually driven right into the fabric giving ideal adhesion and preventing separation.

Hood's knowledge, experience, equipment and research in vulcanization brings only one result: superior and safer industrial gloves.

Hood makes a complete line of industrial Rubber Gloves to meet every job requirement. Write today for colorful catalog featuring the Hood Glove Guide which shows you "how to choose the RIGHT Glove for EACH job."



protect vital hands with HOOD GLOVES

HOOD RUBBER CO., Watertown, Mass.

versial situations, with the result that morale and mutual understanding are enhanced. Here is a vital, human interest story in the making, one with emotional as well as factual interest.

Safety is an adventure when its significance in terms of national or company welfare is underscored, as in the two examples just shown. If safety directors will give free rein to their imagination, they will find that safety also extends its influence dramatically into the community, the state, and especially into the home.

One method of stimulating interest might be a company sponsored short story contest open to the children of employees on the subject of "The Drama of Safety."

Stories Are There

Or there are plenty of stories loaded with human interest that could be used on bulletin boards or printed in the company magazine. How do you find the story? It's not so hard, use your imagination and ask yourself a few questions.

The next time Gertie tells you her punch press repeated, but that the pull-back guard jerked her hands out of danger, don't simply make a note to have a maintenance man check the press. There is a story here. What would have happened if the press had not had a pull-back guard? What would have been the effect on Gertie's life if she had lost some fingers or a hand in the accident? How many other people would have been affected? Check into Gertie's personal situation. Is she about to be married? Is she the bread-winner for the family? Is she married? Does she have children at home?

There is plenty of drama in accident prevention. Just because everyone recognizes the worth of safety, it is no reason for safety directors to stick to the routine, dutiful or even apologetic approach. It's time that safety were made as colorful as it truly is. Take a look at the accidents that didn't happen. Lights! Action! Camera!

Spill-Resistant Floors

(From page 26) in direct contact with the ground unless the concrete floor has been thoroughly membrane waterproofed. Asphalt tile, on the other hand, can be successfully laid on a concrete floor which is subject to damp conditions.

None of the reagents was highly destructive to all of the samples. At least two of the materials showed excellent resistance to each reagent. Although materials of a given type tended to be resistant to the same reagents, the differences between the resistance of individual samples of a given material was large enough to indicate the desirability of testing samples of floor coverings where severe conditions are anticipated.

Picture by courtesy of the National Bureau of Standards.

Handling Steel

(From page 30) wear out, the operator can readily see the broken wires. But, since the slack that results from broken wires is immediately absorbed by the body of the sling, the strength of the sling is maintained even after several wires are broken. Furthermore, the manufacturer claims that each sling is pretested to make sure that it will safely hold the recommended working load.

What has been outlined here are the uses of woven wire slings in steel warehousing operations. Similar applications for this versatile production and handling tool can be found in construction, pipe laying, petroleum and chemical work, and general factory operations, especially where a flexible and broad-bodied sling will increase the stability and safety of the load.

Figures 1 and 3 by courtesy of Cambridge Wire Cloth Company.
Figures 2 and 4 by courtesy of Edgecomb Steel Company.

AN IDEAL PLANT OR DEPARTMENT SAFETY AWARD

GC-3 PLAQUE . . . beautiful two-tone jewelers bronze etching mounted on a genuine walnut shield. 7⅝" x 7¼"—$6.50.

1933 SERIES—1¼" dia., hard glazed enamel, heavily gold plated pin and safety lock catch. $10.50 (plus Fed. tax).

STOCK ITEMS—IMMEDIATE SHIPMENT
Write for Complete Safety Catalog

WILLIAMS JEWELRY & MFG. CO.
Silversmiths Bldg., 10 S. Wabash Ave.
Phone CEntral 6-5018 Chicago 3, Ill.

SAFETY MAINTENANCE & PRODUCTION Salutes a Safety Idea for MARCH

Safety Hats for Linemen

FOR better protection of line crews, the safety-conscious electric power industry is adopting protective headgear of the type commonly used on construction projects and throughout the mining, steel, petroleum and shipbuilding industries. Among the first in the power industry to join this move for greater protection of line crews is Consumers Power Company of Jackson, Michigan. Consumers Power linemen are now using laminated plastic protective hats for pole-top, surface and underground work.

The protective helmet is an important part of the company's recently revised safe practices for line crews, recommended by a special committee appointed to study ways and means of making work on energized equipment safer. The hat used by Consumers Power has high insulation properties to provide protection in case contact is made with high voltage conductors, as well as for exceptionally high mechanical strength for protection against falling objects. Linemen are exposed to many such hazards, and Consumer Power officials report that the safety helmets already have prevented injuries to some of its linemen.

In one instance a worker who had just been issued a new protective hat decided to wear it home. On the way, his car was demolished in a head-on collision. He was thrown head first against the windshield, breaking the glass, and bending the metal divider strip to the contour of his safety hat. Although he suffered other injuries, he is convinced that his safety hat saved his life.

One lineman avoided serious and possible fatal injury while climbing a pole. The bright sun caused him to misjudge distance and climb too close to an energized conductor. His safety hat contacted a 4800-volt wire and provided his head with complete protection against electric shock.

Another lineman escaped injury when a three-pound sleeve attached to the end of an energized 5,000 volt conductor fell and struck his helmet. In addition to sparing the lineman a serious blow on the head, the helmet protected him against electric shock from the live wire.

Although the use of safety hats to protect linemen from electric shock is comparatively new, the results obtained in less than a year have more than justified the program both from the standpoint of cost and in injuries prevented, the company has reported.

The hat is designed to withstand severe impact, and a webbing cradle is built in to distribute the force of an impact over a large area, thus offering additional protection to the wearer's head and neck. The smoothly rounded crown causes falling objects to glance off.

The company's safety hat program was started about a year and a half ago, reports Consumers' General Safety Department. Employees have readily accepted the new helmets and the majority of their line crews are now equipped with them. On the basis of their experience the company reports that safety helmets for line crews have proved practical and valuable personal protection.

Picture by courtesy of Mine Safety Appliances Co.

Boate Promoted

APPOINTMENT of Thomas N. Boate, director of public safety of the Association of Casualty and Surety Companies since 1944, as manager of the Association's accident prevention department, succeeding Julien H. Harvey, who retired last year, has been announced by J. Dewey Dorsett, general manager. At the same time Mr. Dorsett appointed John V. Grimaldi, director of the industrial division, as assistant manager of the department.

Mr. Dorsett said Mr. Boate's selection as successor to Mr. Harvey had been made with the advice of a subcommittee of the accident prevention department advisory committee. Mr. Boate had been closely associated with Mr. Harvey in the department's highway safety work, supervising its numerous programs in behalf of high school driver education, periodic inspection of motor vehicles, traffic engineering and agent participation in safety efforts. He has been acting manager of the department, at the same time carrying on his own duties as its public safety director, since Mr. Harvey retired recently.

Mr. Boate was a captain of the famed Pennsylvania State Police, in complete charge of its traffic division, when he joined the accident prevention department of the Association in November, 1944. His wide knowledge of traffic safety work was acquired in his 20 years with the Pennsylvania State Police, and his seven years of service as the Association's director of public safety.

Mr. Grimaldi, who will continue his present responsibilities in industrial safety work in addition to assisting Mr. Boate, has been with the Association as director of the department's industrial division since January 1, 1945. He is a gradute of New York University with the degrees of B.S. and M.S. and is a member of the American Society of Mechanical Engineers and the American Society of Safety Engineers. Before joining the Association he was with Scully Steel Products Corporation and directed the safety programs of the Grumman Aircraft Engineering plant at Bethpage, L. I.

Ladder Safety

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Safe-Hi LADDER SHOES

No ladder is safe if it can slip.
Safe-Hi Ladder Shoes give four-way protection against accidents:

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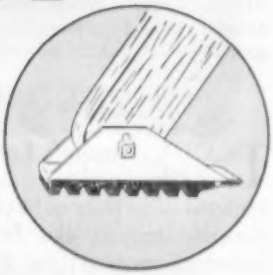
3. Ridges bite through and scrape off foreign matter for firm grip.
4. Self-sharpening spike holds on ice or snow.



The hard tool steel spike core is welded to walls of softer steel which wear away more rapidly, making Safe-Hi Ladder Shoe Spikes self sharpening. Quickly attached to standard wood or metal ladders.

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A.S.A. Conference

THE Third National Standardization Conference, sponsored by the American Standards Association, will be held in conjunction with the Centennial of Engineering in Chicago, September 8–9–10, 1952, the ASA has announced. The conference will take place at the Museum of Science and Industry. The three day series of meetings will emphasize the role of standards in the many technological advances during the past century.

The 34th Annual Meeting of the American Standards Association will be held at The Waldorf-Astoria, New York, November 19th, 1952. The Howard Coonley Medal and The Standards Medal will be presented at the Award Luncheon.

TRANSPORTATION SAFETY

MOTOR FLEETS NEED MEDICAL PROGRAMS TOO

Motor vehicle fleets have almost completely overlooked the technique of preventing losses by means of medical programs—programs which have proved their value in industry.

By ROBERT CLAIR *

IN OUR company's Loss Prevention Department, we have accumulated more than eight years of experience studying and working out industrial medical Loss Prevention plans in collaboration with many of our policyholders operating various types of industrial establishments. Our staff of industrial physicians and registered nurses—known as industrial health consultants—have been working with our safety engineers especially in the prevention of certain types of Workmen's Compensation accidents that do not appear to be preventable through the conventional engineering, supervisory, and educational methods.

Basic Approach to Accident Prevention

As a number of our people have said, there are direct and indirect approaches to accident prevention. One indirect approach stems from our knowledge that the physical well-being, the satisfaction, the contentment that an employee experiences in both his home and occupational life have a bearing on his accident record. Briefly, if an employee is personally well adjusted, he will have fewer accidents. This leads us to our present emphasis on efforts to conserve and increase the effectiveness of the individual employee.

By the employee's *effectiveness*, we mean his ability to perform his work well, without harm to himself or others, and to live well in the environment outside his place of work. We prefer to use the term "individual effectiveness" rather than "health" because the word "health" has been abused. Our concept of health must be tied in with a man's work. If he has the capacity to live and work effectively, he may be said to have good health.

We have further defined individual effectiveness, in terms of industrial accident-prevention technique, as the summation of all the factors that affect an individual's capacity to work.

Our work, following this line of thinking, has led us to some surprisingly favorable results. We feel that we are well on the way toward developing a more thorough control of accidents through the improvement and conservation of the individual effectiveness of employees in industry.

Application to Motor Fleets

We have now begun to transfer our thinking, using a parallel pattern of approach, from industrial establishments to motor-vehicle operations. Although our research is still in its early stages, we are quite convinced that there are immense opportunities for the establishment of fleet preventive medical programs, and for the control and correction of certain personal health conditions existing among its employees. There is even more at stake since we are attempting also to control cause factors that contribute both to employee injuries *and* to traffic accidents.

We are continuing our research aggressively, but we may not arrive at what we consider a completely effective pattern for some time to come. It is hoped that the research will not only result in the elimination of certain factors contributing to the cause of many Workmen's Compensation injuries to drivers and terminal employees, but also that other causative factors in motor vehicle accidents will be brought under better control. More specifically, we anticipate that some of the more important accomplishments will be: (a) more effective

* The author of this article is Assistant Vice-President, Loss Prevention Department of a leading casualty insurance company.

operating schedules, (b) lower motor vehicle maintenance costs, (c) better industrial and public relations, (d) an increase in the health and, therefore, the personal on-the-job effectiveness for the terminal employees and for the commercial drivers.

Our general approach is through the application of properly designed medical programs, which are essentially *preventive* rather than *curative*.

Fleets Need Medical Plans

The findings of our preliminary fleet research reveal general lack of planned and coordinated medical programs that other branches of American industry have found to be so effective. Every first aid kit examined in our initial research was not only found to be incomplete but also to contain highly contaminated supplies. Where first aid care was assigned to specific individuals, their Red Cross certificates were obsolete. No location studied had a registered nurse on full- or part-time service even though some were large enough to justify amply the employment of a nurse. In the long-haul public carrier operations the only records kept were those required by law: pre-employment and annual physical examinations, and records of serious injuries. Some of these indicated remedial conditions, but no follow-up for medical counsel and for referrals was provided.

There appear to be two main reasons for these conditions. Compliance with mandatory requirements has led the industry to feel that by doing what they legally should, they are doing all they can. Legal minimums have in a very real sense become maximums. Also, the geographical spread of the employed group has led to the belief that industrial medicine cannot be applied to the motor transport industry with its decentralized personnel.

To the best of our knowledge, no one as yet has made a concerted effort to teach fleet operators the value and the feasibility of a planned preventive medical program. We are gradually reaching a point where we will be able to do just that. Our tentative program appears workable and we can predict its worth, but we need more research and field study at this time. We need more fleets who are willing to embark on such a program so that we can establish more cogent figures to prove its value.

Benefits of Medical Program

Most of the fundamental elements of a preventive medical program that have proved to be effective in other industries are applicable, with some modifications, to fleets even though their employees may be deployed over a wide area. Centralization of employees in terminals makes such application simple. The problem of the long-haul driver on the road is different but in no sense insurmountable.

Other industries have found that good medical case control of compensable injuries will markedly reduce compensation losses. Medical control can be developed to a degree in fleet operations.

Other industries find two important aspects in a *pre-placement* physical examination. One is proper job placement according to physical abilities and disabilities. The other aspect is attention to and follow-up on correctible conditions found in the new worker. This latter aspect is also important in annual physical examinations. It is valuable for continued accident prevention, improved worker effectiveness and reduced absenteeism. Only a few fleets are presently using these methods.

The employment by other industries of full-time industrial nurses, and of the part-time industrial nurse program that we have pioneered so successfully especially in the Boston and Worcester areas, is applicable with some modifications to motor-vehicle terminals.

Even some of the wider ramifications of in-plant medicine may well prove to be applicable. For example, some plants have developed programs on nutrition because they realize the significance of fatigue

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SEE PAGE 7

(Advertisement)

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"Two-Piece Excelolite"—Same as Excelolite, two pieces 2" x 2-3/32", carefully matched, make one complete 2" x 4-3/16" plate.

"Tufweld"—A piece of clear plastic firmly pressed between two welding plates to make a single unit. Can temporarily be used even after one piece is cracked.

"Sel-Blue"—Brings out white portion of flame.

"Cobalt Blue"—Brings out red portion of flame.

"Green Glass"—Recommended where only small amount of Infra Red is encountered.

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We have cited the above points to indicate that one cannot take the total preventive medical program that has proved so worth while in other branches of industry and apply it to fleets. Much of it, however, with appropriate tailoring, will fit well and should prove equally profitable.

In common with other industries, fleets will find the problem of the older employee becoming increasingly important. Many of the aspects of our program for in-plant medical handling of the aging-worker problem are applicable to fleets.

Beyond methods for applying industrial preventive medicine to motor vehicle fleets, there are a number of fields for fruitful research by medical personnel who are interested in the health problems peculiar to fleet operation.

In brief, we have had considerable success in developing effective industrial preventive medical programs for our policyholders in industry and business. In many instances, the results have been surprisingly good. We now turn to the commercial fleet. Our initial research has shown us that little or no preventive medicine is now in effect. It seems feasible to transfer, with modifications the principles and practices of industrial preventive medicine to fleets. We need more research and experience before we will have a pattern that will be completely effective. We can approach the personal causes of accidents and the individual aspects of sickness, absenteeism, and worker ineffectiveness in a plant. It appears that we shall be able to approach the same factors in fleet operations.

Eight-Ball Contest

MR. KENNETH N. BEADLE, Safety Director for Pacific Intermountain Express Company, has introduced a new anti-accident competition throughout the company's interstate organization.

With nearly 2,100 employees on the P-I-E payroll in nine states and with a large majority of these people employed in the General Shops at Denver, District Service Shops and Terminals, a campaign to reduce the frequency of personal injuries was felt to be of equal importance with accident prevention on the streets and highways. Beadle inaugurated the new competition which has been designated as the "Eight-ball Contest" in order to emphasize to supervisors in charge of district shop personnel, dock employees, and mechanics and service personnel in the three main divisions of the General Shops at Denver, the importance of reducing personal injuries through sound and practical safety precautions and training. "We have succeeded very well in reducing vehicle accidents through our driver training and safety award programs," stated Mr. Beadle, "but we have not had a similar award program nor has it been practical to adopt one for personnel working in our shops and on our terminal docks."

The Award Nobody Wants

In order to emphasize safety to District Service Shop Foremen and Dock Foremen and supervisory personnel in charge of Stores, Service, and Overhaul Departments in the General Shops, three eight-ball trophies will be presented monthly to the Foreman or Supervisor with the worst accident record for the preceding three months. Accident figures will be based on the cumulative record for the preceding three months and announced monthly throughout the year.

The trophies stand about six inches high and rules of the contest require that they remain in a prominent position on the recipient's desk during the time he is the authorized holder. Although the contest just began in December, competition is already keen to avoid the dubious distinction of being the "winner." Three eight-ball trophies circulating throughout the P-I-E system have acquired the title of "hot potatoes" that nobody wants to grasp.

Safety Code Needed for Printing Machines

INITIATION of a project to establish a safety code for signaling devices and controls for graphic arts equipment under the procedures of the American Standards Association has been recommended at a conference of manufacturers, purchasers, and employees using this equipment.

Control and Signals

Different signaling methods used in printing plants throughout the country to indicate starting, stopping, or slowing up of a machine—bells, horns, whistles, flashing lights—have caused a great deal of confusion and many accidents as workmen move from one plant to another.

Another cause of severe and sometimes fatal accidents is the location of the power control button on a machine. It is in almost as many different positions as there are machines. This makes it extremely difficult for the workman to shut the power off in an emergency if he is not familiar with the machine, or if he happens to be on one side of the machine and the button is on the other.

To remedy this situation and make the use of printing and binding machines as safe as possible, the conference recommended the initiation of this project. They also recommended that the Research and Engineering Council of the Graphic Arts Industry be invited to sponsor the program.

The recommendations of the conference will be referred to the Safety Code Correlating Committee of ASA for final decision as to whether a committee will be set up under ASA procedure.

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Off-the-Job Accidents

(From page 22) has been flung at us by disability benefits laws now becoming so popular. At the present time the States of Rhode Island, New Jersey, California, and New York have employee disability benefits. About 20 other states are very active in presenting such a law, particularly in industrial states. In the past, an epidemic or catastrophe has not necessarily affected the industrialist's insurance premium even if some of his employees were involved. But now, such occurrences will, particularly if any of his men are implicated.

From this aspect, the new disability law is a blessing. The real business men and business organizations are going to support, to a greater degree, community safety and health campaigns. They will find that such projects will in the long run be beneficial to them because of safer and healthier citizens in the community.

Too many safety men have been complacent about off-the-job accidental injuries. Some have been promising to do something about this problem. It has now become essential to include, in industrial safety programs, activities that will effect the elimination of off-the-job accidents. Management has had its attention drawn to the seriousness of the situation by the disability laws and will demand action.

The disability benefits law offers the best opportunity the safety engineer has ever had to demonstrate that he can successfully perform the functions of preventing injuries. Those safety engineers having a well-established industrial safety program are in an enviable position, because experience has shown that the fundamentals necessary for eliminating accidents are the same whether the attack is toward the prevention of industrial accidents or off-the-job accidents.

As in plant safety, many organizations are prepared to offer suitable educational materials on accident prevention in the home, on the streets and highways, and in recreation areas. We must not overlook the tremendous effect off-the-job safety training will have on the families of employees. Furthermore, suggestions and programs will have to be presented in such a manner as to make the worker receptive and to encourage his resourcefulness in practicing and thinking safety.

Because off-the-job safety benefits every person concerned—management, employees, the families of employees, and the community—the program must be a cooperative one backed by a labor-management committee, if one exists, top management, and the labor organization. In the last analysis, the success of an off-the-job program depends upon the efforts of the individual employee, upon the members of his family, and the general public. Industry is not the only one that benefits from off-the-job safety. The greatest beneficiaries are the employees and their dependents since they suffer directly from the accidents on or off the job through physical injury and, in some instances, a long term or complete loss of earning power.

Set Up a Program

As mentioned before, a study of the activities for preventing off-the-job accidents has been made. Among the conclusions derived from these studies is the fact that any type or size organization can effectively carry out an off-the-job accident prevention program. Of course, the type of the organization and the policies of the management will determine the procedure best suited to a specific safety program.

According to present findings, the following are considered essential for creating and maintaining an off-the-job safety program:

First—The program must have the interest and approval of management and the designation of a department or individual who will be responsible for off-the-job safety activities.

Second—Such a department or

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individual should establish information and statistical data on the subject for the purpose of determining the activities required to combat and solve the problem effectively. Forms for reporting and recording the information of value in planning the necessary program will be needed.

Third—Regular reports should be prepared on the company experience and sent to interested parties. The cost factor should be included in such reports.

Fourth—As part of the reports and records, a comparison of the on-the-job and off-the-job experience should be given, although some may prefer to maintain separate records.

Fifth—Special programs designed to solve the particular problem should be conducted. A good idea is to study or learn what the other fellow is doing to stop off-the-job accidents. In addition it is well to solicit the assistance of safety councils and other safety-minded units, and use their offerings as a basis or an aid in your own program.

Sixth—As in industrial accident prevention, an active and continued program to maintain the interest of employees in safety off the job will be needed. The type of material used in the program should be selected so that the message will be educational and suggestive rather than mandatory. The use of the proper method and program, the correct materials, and the continuous recognition of the existence of the problem will result in conducting a worth while and effective off-the-job safety program.

Unless we do our job as safety engineers, this challenge of off-the-job accidents will not be met, and management as well as the public will call us on our inability to meet this challenge—a challenge that is not a challenge, but a check-up on something that should have been of vital interest all the time—"off-the-job" accidents.

Finally, too many are working "at safety" rather than "for safety." If we are to continue to do the good work of accident prevention that we have been doing, we shall have to apply ourselves more diligently to the job of preventing off-the-job accidents.

From an address presented at the 39th National Safety Congress.

American Box Wins Ohio Safety Award

FOR the second consecutive year, the title "Safest Woodworking Plant in Ohio" was awarded to The American Box Co. of Cleveland, at the 21st Annual Greater Cleveland Industrial Safety Campaign banquet, held recently in the Carter Rainbow Room.

The Safety Award, a yearly citation approved by the Industrial Commission of Ohio, Division of Safety and Hygiene, and the Greater Cleveland Safety Council, was presented to Henry S. Kubes, Vice President and General Manager of the 50-year-old container firm.

IT PAYS TO BE ALERT

A MEMBER of the ships crew was helping to take a lube oil hose off the vessel with a gantline. One end of the hose was being pulled by a jeep on the dock when the gantline was caught on an obstruction. As the crewman walked over to clear it, the gantline came free striking him across the neck and face. Although he was not seriously injured, this accident might very well have turned into a fatality. Had the man been more attentive and stood clear until the jeep had stopped pulling, this accident would not have happened.

CHECK THE JOB

A MEMBER of a repair crew engaged in overhauling a gas engine was called away from the job before he had completed his duties. He left some of the valve plates untightened and failed to leave word that the engine was not ready for operation. The engine operator, without checking to see whether or not the job was completed, started the engine. When he turned gas into the compressor he discovered it was leaking through one of the untightened valve plates. Vapors, caught by a breeze from the open windows, was blown over the magneto of an adjacent engine causing an explosion. The operator sustained severe burns and died 35 days later. This fatality could have been prevented if the operator had taken the normal precautions to see whether or not the job had been completed before starting the engine.

EXIT THE CLOWNS

CLOWNS belong in the circus, not in the industrial scene. One such show-off nearly destroyed his own means of livelihood. While supposedly "working" in a metal finishing department, he was tossing matches into a ventilation hood over caustic tanks. When the matches were hit by the fan, they would ignite and were blown outdoors. This form of entertainment took a more exciting turn when one of the burning matches fell back into the room, landing in a nearby tank of slushing oil. The oil immediately caught fire and considerable damage ensued.

UNSECURED LOAD

A LOGGING company employee was killed when unsecured logs on a logging truck fell off while being moved from the loading area to a point some distance away. The load had not been secured with chains and it was common practice to move the trucks away from the loading area before securing them. However, such practices of moving unsecured loads were contrary to the safety regulations of the state in which the accident occurred. Investigation also showed that the ground to be covered was so rough that common sense as well as state regulations should have dictated the securing of the load before the trucks were moved.

A GOOD EXAMPLE OF WHAT NOT TO DO

IT MAY be easier to point out the mistakes of others than it is to recognize one's own errors of judgment, but when it comes to industrial hazards, each person would do well to account to himself for his own actions. Particularly is this true of anyone in a supervisory capacity, who should strive to set a safety example to those under him. We heard the other day about a departmental supervisor who taught a lesson to himself as well as to the other employees in an unexpected way. The company furnishes its personnel with necessary safety equipment, such as goggles, face shields, welding helmets, etc., and this particular supervisor was always most emphatic that the men must wear the protective devices. One day this same department head was dressing a chisel on a grinder and failed either to use the shield on the grinder or to wear safety goggles. After all, it was only a two minute job. After . . . all, the result was a steel splinter in his eye! It is not recommended that other supervisors use a similar method to teach their co-workers the importance of wearing safety equipment—that is, unless one-eyed supervisors are to be the coming fashion.

BLOCK THAT BLOCK

THE operating buttons of a scrap baler were mounted on a twelve-foot swinging arm to permit the baler to be operated from several positions. The operator, however, blocked the control box to let the baler run without manual control. Another employee, acting as a helper, tried to step over some moving scrap. His leg became entangled in the scrap and it was pulled into a partially formed bale. The accident resulted in compound fractures of the leg. Here is one more proof of the necessity of enforcing the rule that no person should ever block or wedge any machine control causing it to operate other than the way it was intended.

OBSTRUCTED VISION

THE driver of a semi-trailer parked his truck on the platform in such a way that the rear end of the 28-foot box projected into a station driveway. One of the service station attendants, while attempting to repark the truck, backed into a pump island, pushing the island approximately seven feet along the platform. All the pump lines and electrical connections were broken and sparks from the shorting wires ignited the gasoline immediately starting a fire. Extensive damage to the service station and to the truck by this accident could have been avoided had the attendant practiced a very simple rule of safety. If it is necessary to move or park a vehicle, another person should assist by guiding the driver.

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THE FIRE FRONT

Fire Prevention Winners

FORT WAYNE, Ind., won the Grand Award in the United States for the best 1951 municipal Fire Prevention Week program in the international contest annually sponsored by the Fire Prevention and Clean-Up Campaign Committee of the National Fire Protection Association, it was announced recently by Percy Bugbee, Chairman of the Committee and General Manager of the NFPA. The purpose of this contest is to stimulate competition and encourage the use of Fire Prevention Week as a "springboard" for year-round fire prevention programs. Louisville, Ky., Atlantic, Ia., Los Alamos, N. M., and Fort Collins, Colo., were judged next in that order of all U. S. communities entering.

In Canada the Grand Award winner was Ottawa, Ont., with Hull, Ont., and Edmonton, Alta., runners-up.

Industrial Winners

In the Industrial Division of the contest honors again went to Fort Wayne, Ind., as the General Electric Works in that city copped First Place, with the Argonne National Laboratory, Chicago, Second, and the Delco-Remy Division of General Motors Corp., Anderson, Ind., Third.

The winners in the Government Division of the contest were: U. S. ARMY: First, Fort Bragg, N. C.; Second, Memphis General Depot, Memphis, Tenn.; Third, Fort McPherson, Ga. U. S. AIR FORCE: First, Westover Air Force Base, Chicopee Falls, Mass.; Second, Langley Air Force Base, Hampton, Va.; Third, K-2 Air Force Base, Korea. U. S. NAVY: First, Naval Supply Center, Oakland, Calif.; Second, Naval Air Station, Alameda, Calif.; Third, Naval Base, Norfolk, Va.

2,164 entries were received in the 1951 Fire Prevention Week Contest of which 1,076 were from cities and towns in the United States, Alaska and Hawaii, 614 from municipalities in Canada, 54 from U. S. and Canadian industry, 247 from the U. S. Navy, 105 from the U. S. Army, 66 from the U. S. Air Force, one from the U. S. Veterans Administration and one from the U. S. Atomic Energy Commission.

The largest number of reports received from one state or province was from Quebec. The next largest number was from Indiana.

The best volumes submitted by state or provincial fire marshals outlining the scope and results of their state programs were filed for the—

State of Kentucky by W. L. Martin, State Fire Marshal.

State of Indiana by Alex Houghland, State Fire Marshal.

State of Connecticut by Edward J. Hickey, State Fire Marshal.

The finest county job in the U. S. was turned in by the Montgomery County Department of Public Safety, Division of Fire Protection, Montgomery County, Maryland.

Special recognition was awarded the Evanston, Ill., Township High School and the P. J. Jacobs High School, Stevens Point, Wis., for excellence in their fire prevention education programs.

New Fire Film

A NEW, 18-minute, color, sound film, "Not Too Hot To Handle," has just been released by Walter Kidde & Company, Inc. The picture demonstrates approved fire extinguishing equipment and procedures for Class A, B, and C fires.

During the film, professional technicians use all recognized types of portable extinguishers. Wood, flammable liquid, and electrical blazes

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are put out in seconds by the application of the proper extinguisher in an approved method. Among the agents demonstrated are water, soda acid, carbon dioxide, dry chemical, foam, and vaporizing liquid.

The new film is available nationally through any of the company's six district offices (Chicago, Detroit, Philadelphia, Dallas, Atlanta, Los Angeles), or upon request to any Kidde distributor.

Highest Fire Losses

FIRE losses in the United States during 1951 reached an all-time high, totaling an estimated $731,405,000, according to Lewis A. Vincent, general manager of the National Board of Fire Underwriters. The previous high mark was set in 1948 with losses of $711,114,000.

Estimated fire losses in December 1951 reached $68,206,000, which were 2 per cent higher than losses of $66,820,000 in December 1950, and 13.5 per cent higher than losses of $60,064,000 for November, 1951.

Fire Protection of Piers and Wharves

PIERS and wharves are the communicating link between our land and water transportation systems. Although much thought and study have been given to improvements in pier and wharf construction, and although some well protected structures have been built and some existing structures have been protected with automatic sprinklers or other forms of protection, many existing structures bear mute testimony to lack of thought for fire protection. For example, many constructed with wooden members, with unprotected steel framing, and with tremendous unbroken areas, are lacking a reasonable minimum of private fire protection; and many combustible substructures are without fire stops or provisions for fighting under-deck fires effectively, warns a recent bulletin issued by the National Board of Fire Underwriters.

In handling the commerce of an ever-increasing amount of products of our scientific age, there are situations where large concentrations of materials of all kinds including many of hazardous nature can be found on the piers and wharves of most of our port cities. Such situations present the possibility of a very large fire loss; may at times present the possibility of loss of highly critical materials and facilities, and may seriously hamper or endanger firemen.

Regardless of how thorough an inspection service is provided by the owner or lessee of the pier or wharf property, frequent thorough inspection by the fire department or the fire prevention bureau of the municipality is highly desirable. These inspections in addition to calling the owner's attention to hazardous conditions also permit the members of the fire department to become acquainted with the conditions that exist and may have a marked influence on the fighting of fires on the pier or wharf.

A well organized and equipped fire brigade should be trained for

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"Woven-Gards" are hand protectors, mitts, pads and sleeves made of a new long wearing safety material. They provide flexibility, comfort, resistance to abrasion and cutting far beyond that of anything used before. They are extremely oil-absorbent and do an excellent job when handling oily, slippery sheets. The porous weave makes them one of the finest protectors for handling lower temperatures. Enthusiastic users say they have never seen values like "Woven-Gards." Excellent protection at lowest cost. Send now for descriptive folder and prices.

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first-aid fire fighting during the time necessary for the public fire department to respond. There is no excuse for the officer of such a brigade if he does not immediately call the fire department; the type of construction and other features of the pier or wharf are such that there is a high probability of quickly needing all the fire department equipment and manpower that can be concentrated.

Important factors in the value of guard or watchman service are the character of the men employed for this service and the training which they have. A guard or watchman should be physically fit and mentally alert, and be properly instructed in the performance of his duties in relation to fires.

Automatic Devices

Automatic protection devices against fire, robbery, and sabotage can be provided at a saving in cost over that for watchman service in some instances. The electric eye and the invisible ray can be so located that no approach to the pier from any direction can be made without discovery and the sounding of an alarm.

Automatic sprinklers will extinguish a fire or hold it in check until the fire department, notified by automatic alarm from the sprinkler system, can arrive. Automatic sprinkler and automatic fire alarm systems discover a fire before it reaches an advanced stage where the fire department would have a severe fight to prevent total destruction of the property on the pier or wharf with serious danger to adjacent ships or other property.

Other private fire protection including standpipe and hose systems, hand extinguishers and deck nozzle openings are all of vital importance. It should be recognized that any expenditure of money for the installation of private protection is a permanent improvement and not a temporary one; the cost of maintaining such equipment and systems is small compared to the protection value it will have for many years to come. Municipalities should cooperate with pier and wharf owners by giving serious consideration to the installation of city mains and hydrants near such property. Municipal fire alarm boxes should also be readily available.

Fire Hazards

To those who have made a study of pier fires, it is the large unbroken area which constitutes the greatest hazard. The superstructure on piers and the understructure when of wood constitute horizontal flues which allow a small fire to be quickly whipped into conflagration proportions. The direction of the wind in a pier structure is usually from the cooler water end to the warmer land end, which means that fire fighting from the land end is severely hampered. Where an intermediate wall or partition or several intermediate partitions can be provided both in the superstructure and the substructure, even though the wall or partition does not have very great fire resistance, it gives the firemen a vantage point from which they could more effectively fight a fire.

Eye Accidents

(Continued from page 37)

regulations in their departments. It is up to them to see that the employees under their supervision wear their safety glasses at all times.

Lighting Problems

An illumination committee consisting of the optometrist, superintendent of plant lighting and the safety engineer was formed to tackle the problems of illumination on the job. This committee made studies and recommendations to correct problems that arose in connection with illumination, such as magnification, special illumination for close work tolerances, color contrast painting for machine safety, indirect lighting and elimination of glare.

The optometrist contributed to the program by engaging in several research projects relating to visual efficiency and job productivity and safety. Several papers have been published in various periodicals describing the function and progress of our program.

The optometrist had the cooperation of several outside agencies. Discussions were held with representatives of the optical companies manufacturing eye safety materials in order to assure the proper type of eye protection for specific occupations.

The cooperation shown us by various agencies, such as the National Safety Council, the Better Vision Bureau, and the National Society for the Prevention of Blindness was highly commendable.

A vision program in industry cannot be successful without the cooperation and stimulating contribution that each of these groups or agencies can render.

The responsibilities of the optometrist in such a program are great indeed. However, he realizes that the ultimate success of an Eye Protective Program in industry is dependent, not on him alone, but on the cooperation of all concerned.

From an address presented at the 1951 Annual Conference of the National Society for the Prevention of Blindness.

Telephone Workers Get Eye Test

HOW to measure individual visual skills and match them to job requirements are being studied by Personnel and Safety Department members of the Pacific Telephone and Telegraph Company.

In intensive two-day sessions in Seattle, Portland and Los Angeles selected personnel learn how to give visual performance tests on a non-clinical visual testing device developed by a leading optical equipment company and Purdue University.

Used solely for measuring visual performance and not for eye refraction or diagnosis, the "foolproof" optical device has been used for several years by hundreds of U. S. top-ranking industries and the armed service to measure seeing skills of over 5,000,000 people as an aid in placing them in jobs they are visually qualified to handle.

An executive of the optical company has stated, "Research has proved conclusively that how well a person sees affects how he works. Inadequate vision for a job has a direct bearing on earning power, job satisfaction, safety, absenteeism, and other work factors."

This visual testing instrument measures 12 seeing skills, including acuity at near and far distances, binocular balance, depth and color perception, and is now being used by license examiners in North Carolina and Tennessee to determine the seeing ability of motorists in state-wide campaigns to reduce the number of accidents on the highways.

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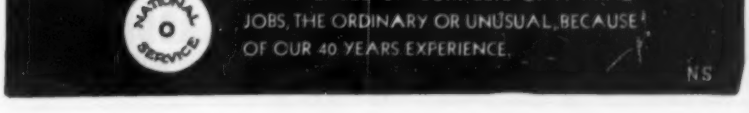
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THE Future SHOWS

Philadelphia, Pa.

March 4–5. Eighteenth Annual Philadelphia Regional Safety & Fire Conference and Exhibit. (Bellevue-Stratford Hotel) Roy M. Godwin, chairman, Philadelphia Safety Council, 17th & Sansom Sts., Philadelphia 3, Pa.

Boston, Mass.

March 17–18, Thirty-First Annual Massachusetts Safety Conference & Exposition. (Hotel Statler). Edgar F. Copell, Pres., Mass. Safety Council, 31 State St., Boston 9, Mass.

Dallas, Texas

March 24–25. Thirteenth Annual Texas Safety Conference (Baker Hotel). J. O. Musick, General Manager, Texas Safety Association, Inc., 830 Littlefield Bldg., Austin, Texas.

New York, N. Y.

April 1–4. Twenty-Second Annual Greater New York Safety Convention & Exposition. (Hotels Statler and New Yorker). Walter A. Gustafson, general chairman, Greater New York Safety Council, Inc., 60 E. 42nd St., New York 17, N. Y.

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Detroit, Mich.

April 7–10. Twenty-second Annual Michigan Safety Conference. (Hotel Statler) Frederick W. Krupp, Executive Secretary, 174 E. Atwater St., Detroit 26, Mich.

Columbus, Ohio

April 15–17. Twenty-second All Ohio Safety Congress & Exhibit. (Deshler-Wallick Hotel) James H. Fluker, Chairman, Div. of Safety & Hygiene, Industrial Commission of Ohio, Columbus 15, Ohio.

Buffalo, N. Y.

April 15–17. Twelfth Western New York Safety Conference & Exhibit (Statler Hotel). W. Wallace Young, Ted A. Clarke, Inc., Erie County Bank Bldg., Buffalo 2, N. Y.

Toronto, Ont.

April 21–22. Thirty-Seventh Annual Conference & Exhibit of the Industrial Accident Prevention Associations (Royal York Hotel). R. G. D. Anderson, general manager, Industrial Accident Prevention Associations, 600 Bay St., Toronto 2, Ont.

Fort Wayne, Ind.

April 22–23. Ninth Annual Northeastern Indiana Safety Conference & Exhibit. Ivan A. Martin, Manager, Chamber of Commerce Safety Council, Ft. Wayne 2, Ind.

Asheville, N. C.

May 4–6. Twenty-Second Annual North Carolina Industrial Safety Conference (George Vanderbilt Hotel). H. S. Baucom, Safety Director, North Carolina Industrial Commission, Raleigh, N. C.

Easton, Pa.

May 6. Twenty-fifth Annual Eastern Pennsylvania Safety Conference. (Hotel Easton) Harry C.

Woods. Executive Secretary, Lehigh Valley Safety Council, 602 E. 3rd St., Bethlehem, Pa.

Chicago, Ill.

May 6–8. Twenty-ninth Annual Midwest Safety Show. (Congress Hotel) Joseph F. Stech, Manager, Suite 806, 10 N. Clark St., Chicago 2, Ill.

Baltimore, Md.

May 8–9. Statewide Safety-Health Conference & Exhibit. (Lord Baltimore Hotel) Joseph A. Haller, Executive Chairman Safety Health Conference, State Industrial Accident Commission, Equitable Bldg., Baltimore 2, Md.

Duluth, Minn.

May 22–23. Twenty-Eighth Annual Lake Superior Mines Safety Council Conference (Hotel Duluth). John A. Johnson, Accident Prevention & Health Div., U. S. Bureau of Mines, 18 Federal Bldg., Duluth, Minn.

St. Louis, Mo.

May 27–29. Central States Safety Conference. (Hotel Jefferson) Reyburn Hoffman, Safety Council of Greater St. Louis, 511 Locust St., St. Louis 1, Mo.

York Harbor, Me.

September 11–12. Twenty-fifth Annual Maine State Safety Conference (Marshall House). A. F. Minchin, secretary, Industrial Safety Div., Dept. of Labor & Industry, Augusta, Me.

Chicago, Ill.

Oct. 20–24. Fortieth National Safety Congress & Exposition. R. L. Forney, General Secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

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The supervisor's importance in any program of industrial accident prevention is stressed in our booklet, "Safety As It Applies to Supervisors." Drawn from the wide experience and professional knowledge of Marsh & McLennan's safety engineers, the information and recommendations presented are being applied by many progressive companies in varied industries throughout the United States and Canada. Write for your copy today.

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N. Y. Safety Conference

TEN thousand safety experts and accident prevention workers from more than twenty states will meet in two of the largest hotels for the 57 sessions of New York's 22nd annual Safety Convention and Exposition for four days, beginning April 1.

More than 200 speakers and panel leaders will bring the latest developments in every field of accident prevention to industrialists, teachers, traffic and law enforcement officials, fire chiefs, housewives and other participants in the sessions at the Statler and New Yorker Hotels.

The convention and exposition are sponsored by the Greater New York Safety Council and 72 national and local cooperating agencies, among whom are the Army, Navy, Coast Guard, U. S. Atomic Energy Commission, Red Cross, National Society for the Prevention of Blindness, six departments of the New York City Government, three New York State government bureaus, the Eastern Railroads Presidents Conference, National Board of Fire Underwriters, American Transit Association, American Merchant Marine Institute, American Hospital Association and chambers of commerce, Women's and professional federations, labor unions and insurance companies.

New Subjects Introduced

Among the fields of accident prevention to which entire sessions will be devoted for the first time this year is one on the safety problems of driver training schools. Deputy Commissioner Halsey S. Carey of the New York State Motor Vehicles Bureau will discuss the licensing and supervision of driving schools at this session, on Apr. 2 at the New Yorker.

Another "first" this year is the session on safety in radio and television, to be held Apr. 4 at the Statler. Radio and television hazards were included last year in the home

safety sessions, but this year the industry will have its own session, under the chairmanship of Boyce Nemec, executive secretary of the Society of Motion Picture and Television Engineers. Accident control in broadcasting studios will be discussed by Joseph D'Agostino, liaison engineer of the National Broadcasting Company. Health hazards of radio and television manufacturing will be outlined by Robert P. Gleason, hygienist of Sylvania Electric Products, Inc.

Disaster control will be discussed as a nationwide problem, both from the viewpoint of dispersal of industries and organizing disaster control in individual plants, at a session in the Statler on Apr. 4.

Also for the first time this year, the problems of air pollution, water pollution and other adverse results of industrial waste disposal are raised to full session status.

The exposition will show in 113 booths the newest developments in safety equipment, driver testing devices, eye conservation tests, accident reduction systems and other visual displays.

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Bottling Plants

(From page 20) on the handling accidents should not draw attention away from the other accident types which acounted for almost half the number and cost of the injuries in this study. Men who fell from heights, for instance, suffered the most severe injuries as noted on Chart No. 1 (relative cost). We can be brief with the remainder of our story with the exception of "flying objects" which is explained in Chart No. 4.

Falls (on same level) and Slips: Of the 66 employees injured, 29 fell and 37 slipped. Forty-one were drivers and helpers. Floors, steps, curbs and other surfaces made slippery by water caused the most accidents. Slipping on or stumbling over ice, rocks, sticks, etc. caused the remainder.

Caught in Machinery: The majority of these accidents occurred when employees' hands were caught in various units of bottling machines. You know why.

Burns: Thirteen men were burned by exploding bottles of hot chocolate. Seventeen were burned by hot stoves, exploding gas or gasoline and by sparks or flames from welding torches.

Using Hand Tools: No one tool was outstanding. Hammers, ice picks, saws, wrenches and screw drivers were well distributed among these accidents.

Falls From Heights: These accidents were too few in number and too diverse in circumstance to produce a pattern. Employees fell from trucks, porches, ladders and numerous other levels.

Harmful Substances: Fifteen workers were burned by caustic solutions. The remaining five injuries were from contact with acid, paint, disinfectant, etc.

Motor Vehicles: Eight of these 14 accidents involved collisions with other vehicles. Five vehicles overturned and one struck a stump. Only two accidents, each caused by mechanical failures, seemed to be beyond driver control.

Conclusion

Every employer whose employees have an undue number of accidents knows how hard he has tried or how hard he hasn't tried to do something corrective. The accident record of any business will pretty well reflect the attitude and efforts of management toward accident prevention. Whatever the official attitude, employees are prone to follow the leader.

The photographs accompanying this report were made through the courtesy and cooperation of the Dr. Pepper Co., Dallas, Texas.

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Foundry Health Conference

A CONFERENCE on "Health Protection in Foundry Practice" will be held on April 11 and 12 at the University of Michigan's School of Public Health in Ann Arbor. At the general sessions of the meeting, industrial health experts will discuss medical aspects, measurement of dust, and such dust-control methods as housekeeping, isolation, respirators, and ventilation. Other sessions will be devoted to the more specific problems encountered in the ferrous foundry, while other groups take up the problems of the non-ferrous foundry. Further information on the conference can be obtained from H. E. Miller, Director, Continued Education, University of Michigan, School of Public Health, Ann Arbor, Mich.

Auto Companies Keep Close Watch on Plant Wastes

BEHIND-THE-SCENES activities in automotive plants sometimes appear dimly related to the production of cars or trucks, but they are as essential to the manufacturing process as the assembly line itself.

They include such things as maintenance, salvage, housecleaning and waste disposal. The latter is a particularly vital and complex factory function.

Industrial wastes generated by the many processes required to produce motor vehicles are varied and often difficult to handle. They include oils, acids and toxic materials, which must be disposed of safely and efficiently. For this reason, automotive companies, in cooperation with public agencies and other industries, devote considerable time, manpower and funds on research into the problem.

These efforts have borne fruit in many ways. One company, as a result of a cooperative study with a neighboring community found that the acid liquid used in removing scale from steel in its rolling mill would make an excellent conditioning agent in sewage treatment. Now, the waste fluid, called "pickle liquor," is stored in specially constructed tanks, and transported by truck to the city sewage disposal plant.

Another automotive company solved the problem with a different approach. After a thorough appraisal of conditions at one plant, the company decided to employ another method of de-scaling steel. In place of the pickling process, the plant now blasts scale from steel with hard metallic particles.

These are ideal solutions to waste disposal problems, representing the ultimate goal of research in the field —either to find a practical use for the waste, or to eliminate it from the manufacturing process. Otherwise, it is necessary to dilute, neutralize or remove harmful substances before industrial wastes can be discharged into rivers or lakes.

Each automotive company employs staffs of specially trained men to control plant waste disposal processes and to carry on continuing research.

Waste Committee

In addition, one company has set up an industrial waste control committee, composed of representatives from each operating unit. The group holds periodic meetings, frequently calling in outside experts for special presentations. A bulletin service also has been developed to keep company executives and their staffs well informed on waste disposal developments.

Such awareness of the problem in all departments leads to extra care in handling contaminating wastes at their sources. By preventing, as much as possible, such materials from entering the waste disposal system, the job of final treatment is simplified. There are many examples of such "preventative" waste control throughout the industry. Plants even remove oil from mop water before it is discarded into the main disposal system.

Figure 1. Typical double-cup filter respirator.

PROTECTION AGAINST

By W. J. WISWESSER, Industrial Hygienist
Willson Products, Inc., Reading, Pa.

FROM the first beginnings of industry dusts have been a hazard to the health of workers. As industry has grown, so has the problem of providing proper protection against the increasing variety of dusts encountered.

Basically, industrial dust refers to those solid particles of matter which are suspended in air and carried with it into the lungs. Industrial dusts are produced principally in operations such as drilling, crushing, milling, grinding or blasting, and the particles are of the same composition as the material being processed. The unit of measurement for dusts is the micron—1/25,000 of an inch—and air-floated particles vary in size from a fraction of a micron to 10 microns, depending on the type of operation and the material involved.

There are many systems for classifying industrial dusts and one of the simplest and most practical appears to be that devised by Edward E. Dart, M.D., Medical Director of Pacific Industrial Hygiene Laboratories. Dr. Dart's classification of dusts, based on their effect in the body, recognizes six types of dusts which are listed and described below:

(1) Dusts which cause extensive pulmonary fibrosis. All dusts containing free silica or asbestos are included in this group. The most serious silica dust exposures arise from operations involving quartz, flint, sandstone, chert and other high silica content materials. Asbestos dusts are met in the handling of serpentine or chrysotile. Less hazardous but still serious are the silica dusts encountered in granite, in industries where silica-containing materials are handled, in anthracite coal, iron and other mining operations, and in the mineral industries. All of the pneumoconiosis-producing dusts very slowly convert and degenerate healthy lung tissue into useless fibrous or scar tissue. The most common type of disease produced by these dusts is silicosis.

(2) Dusts which cause little or no pulmonary fibrosis. In this group are included almost all inorganic dusts except those described in the previous classification. The most important dusts in this group are the silicates, carbon or soot (which tends to accumulate in the lungs), and iron compounds.

(3) Dusts which cause chemical irritation. Acids, alkalies, and other definite chemical irritants such as the toxic fluorides and chromates are contained in this group.

(4) Dusts which cause systemic poisoning. These dusts are composed of particles which come mainly from the heavier and inherently toxic metals such as lead, arsenic, chromium, mercury, barium, or their compounds, and fluorides. Whether inhaled through the nose and lungs or ingested through the mouth and stomach, these dusts dissolve and enter the blood stream to travel through it and produce injury in almost any part of the body. The poisoning effect from toxic dusts may be fast or slow. Workers exposed to heavy concentrations of lead dusts for just a few days may become fatally ill within a week. Others working in light concentrations may not notice any injurious effects until many months later. Systemic poisons are divided for convenience into two groups, those which are not significantly more toxic than lead, and those which are. Only the first group is covered by a schedule for Bureau of Mines approval on respiratory protective devices.

(5) Dusts which cause allergies such as hay fever, asthma or dermatitis. Almost all organic dusts are in-

Figure 4. A flexible abrasive blasting helmet, made from latex-covered canvas supported by head frame. Air is supplied from airline. A flannel collar inside the hood keeps the dust out.

INDUSTRIAL DUSTS

FEATURE

This is the third of three feature articles on Respiratory Protection. The first two articles, dealing with approved equipment and resque squad devices, appeared respectively in the January and February issues of SAFETY MAINTENANCE & PRODUCTION.

Figure 3. Dust hoods shield entire head. This model has interchangeable windows for use with or without a filter respirator.

How do dusts affect employees?
How can the amount of air-borne dusts be measured?
How can dust be controlled?
How can employees be protected?

Figure 2. A supplied-air respirator that provides constant flow of air from airline.

cluded in this classification. Some of those commonly encountered in industry are felt, fur, leather, kapok, rags, paper, wood, wool, rubber, resin, plastics, and synthetic resins.

(6) Dusts which cause fevers. This is a minor classification about which not much is known. Two common members of it, however, are metal fumes and cotton dust.

Air Analysis Equipment

Although dusts are divided into well-defined categories and classifications, it must be remembered that in industrial operations they may frequently occur in combinations of two or more types. In order to determine what dusts are present in any given industrial operation, air analysis equipment has been developed by which it is possible to detect the amount of dust in the air. With this apparatus it is possible to make a reliable estimate on the degree of hazard surrounding a particular job, and thereby determine the extent of ventilation control and respiratory protection needed to assure healthful working conditions. Since this equipment is used only by trained industrial hygiene analysts, it should suffice here merely to name the principal types of apparatus and briefly describe their functions.

The impinger type of dust sampler, which is used widely by industrial firms, insurance companies, state and city health departments, mines and quarries is one of the oldest and best known. As its name implies, this instrument takes a sample of the air around a given operation and determines the quantity of dust it contains, by impinging this air stream against a glass surface covered by water.

Another type of instrument is the chlorinated hydrocarbon sampler. This combustion analyzer is used to determine the concentration of chlorinated hydrocarbon dusts such as chlorinated insecticides like DDT, chlorinated napthalenes or chlorinated diphenyl. These are respiratory hazards common principally to the chemical industries and wire coating operations.

Dust Control

The primary step toward effective control of industrial dusts is to eliminate as much of the contaminant as possible. One method of accomplishing this is by eliminating the sources of contamination or reducing the amount. Proper planning of work areas, correct equipment design, substitution of materials, process or operation changes and good housekeeping are factors to be considered in this method. Prevention of contaminant dispersion by segregating or enclosing the hazardous process, by use of dust-free wet

Figure 5. A fabric-cup type of dust goggle with chenille-bound mask. Goggle is ventilated through the mesh of the fabric.

methods wherever possible, by furnishing local exhaust ventilation, by proper equipment maintenance, and by worker education are effective ways of controlling the concentration of dust.

In many industrial operations, however, it is often either not possible or not practical to eliminate a sufficient percentage of the dust concentration to create truly safe working conditions. Here is where personal protective equipment is required. Respiratory protective devices are not of recent origin. The first known mention of them is in the writings of the Roman historian Pliny, who describes a filter respirator of a sort as being used against vermilion (mercuric sulfide) dust. Another early mention of such devices is by Agricola in his writings about mining practices in the sixteenth century. But the real development of protective equipment as we know it today dates from the first world war. Personal respiratory devices that apply to industrial dusts fall into three main types, respirators, hoods, and helmets, each of which will be described separately.

Filter Respirators

The most popular type of protective device used to prevent the inhalation of industrial dusts is the mechanical filter respirator. (See Figure 1.) There are many makes and styles of these on the market, but all are similar in design, consisting usually of a resilient facepiece to which is attached a filter-holding cup and cap. Filters are constructed of either paper-pulp or felt, depending on the type of dust particles to be removed. Two factors are equally vital in respirator performance: (1) the tightness of fit of the facepiece, which must be shaped to accommodate all types of faces; and (2) the dust retaining capacity of the filter. Breathing resistance is another important factor governing the style, shape, and service life of a respirator. A double-cup respirator obviously will be easier to breathe through than a single cup type. Any dust filter becomes more efficient in dust retaining power when its microspic pores become plugged with dust, but the filter finally develops objectionable breathing resistance and eventually must be cleaned or replaced.

Selecting the proper respirator for wearing under specific conditions is a vital consideration. Not just any dust respirator will meet the circumstances correctly. The type of dust (as described earlier in this article), the concentration of it in the atmosphere, and the general working conditions must all be taken into account. Sometimes the same facepiece design will be satisfactory for entirely different operations but a different type filter must be used. Some hazards require a Bureau of Mines approved device for proper protection while for others almost any properly fitting dust respirator can be used safely. The best source of information on this question is, of course, the Bureau of Mines itself, but any reputable manufacturer or his sales representative will most likely have had experience with similar operations and be able to give you a qualified recommendation.

Supplied-Air Respirators

In some industrial operations the air contaminant is so toxic or so concentrated as to require a protective device which provides clean air or oxygen through a tube from either a cylinder of compressed air or a plant air line. These devices are called supplied air-line respirators and are of two types. As the name implies, in the "constant-flow" type there is a steady supply of air which creates a slight positive pressure inside the facepiece. (See Figure 2) This is the most common type of air line respirator, and a very comfortable one to wear, but it can be used only with air compressor systems. The "demand-flow" type can be used either with a plant air line or with a cylinder of compressed air or oxygen. But the principal difference in this type is that the air flows through it only when the wearer inhales. When he exhales, the flow ceases, thus conserving the air supply, an important factor when a cylinder is being used.

Hoods and Helmets

Dust conditions in some industrial operations require complete coverage of the head and neck. This is true particularly where the dusts encountered are skin-irritant or abrasive in nature and present in suf-

ficient concentration to warrant this degree of protection. To cope with these conditions, the dust hood was developed. This equipment consists of a bag-like device, (usually of cotton duck) which fits over the head and shoulders, extending downward, front and back, nearly to the waist. It is furnished with a window for vision and, depending on the operation, may be equipped either with a respirator or an air hose. Some manufacturers supply a dust hood with interchangeable windows, one slotted and fitted to accommodate a single filter respirator and the other a plain window. (See Figure 3) In other types, the respirator is an integral part of the hood. Some hoods are latex-coated and others are made of special fabrics to meet specific conditions. In operations of this nature, gloves and other protective clothing are frequently used to cover other exposed portions of the body.

The heaviest concentrations of dusts and abrasives undoubtedly occur in sand blasting and shot peening operations and it is for this work that abrasive blasting helmets were devised. All such equipment is furnished with an air line, of course, and in most types the air is supplied through a diffusing tube inside the helmet. The flexible type of helmet is usually constructed of latex-covered canvas and equipped with a single large window protected by a wire screen of fine enough mesh to keep the sand from pitting the glass lens but allowing the wearer to see his work. (See Figure 4)

Balance is an important factor in a sand blasting helmet because of the weight of the equipment. Four to six pounds is considered typical for approved lightweight helmets. For heavier duty, a rigid helmet made of a woven wire frame coated with a special rubber composition is furnished. Naturally, these helmets are heavier than the flexible type and are supported on the shoulders by a thick, resilient, felt collar which cushions the helmet. A sturdily constructed body harness holds the helmet securely in position.

New Dust Problems

Industrial developments are constantly bringing new dust problems to the fore. An excellent example of this is the agricultural chemical industry, which has grown at an amazing rate in the last decade. The mixing and formulating of dust insecticides and the manufacture of fertilizers are processes which definitely require respiratory protection.

Another new field is the employment of radioactive materials in making tests of extraordinarily high sensitivity. These and related applications are coming into use in many industries. The military applications of course are well known. As yet comparatively little is known about radioactive dusts, and, although respiratory devices are recommended for protection against them, there is no schedule set up for approval of these devices by the Bureau of Mines. In fact, at the present time, these extremely insidious dusts are considered to be out of the province of the Bureau.

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Other Protective Clothing

While little emphasis has been placed on protective clothing throughout this article, it must definitely be considered in connection with industrial dusts. There are as yet no standardized types of protective garments for dusty operations, but workers are cautioned to keep fully clothed and to button sleeves and collars on shirts to prevent seepage of the dust into the pores. Gloves also are recommended. There is, however, specific eye protective equipment for dusty operations. Goggles used for this purpose are available in many types but all have the common characteristic of forming a dust-tight seal around the eyes. Many of these are equipped with porous cloth sides (See Figure 5) or with wire screen or special "baffle" ports to provide ventilation for the eyes and to keep the goggles from fogging on hot operations.

The subject of industrial dusts has many ramifications and it has not been possible to give an adequate coverage of all topics in an article of this length. However, there are several recently published books * available which do an excellent job of analyzing every phase of this industrial hazard and those desiring further information on the topic are directed to them.

* "Industrial Dust," by Drinker and Hatch (McGraw-Hill, 1936) with 260 bibliographic references up to 1936.
"Industrial Health Engineering," by A. D. Brandt (Wiley, 1947), with 221 references up to 1947.
"Industrial Hygiene and Toxicology," F. A. Patty, editor (Interscience, 1948–9). In two volumes.

Pictures by courtesy of Willson Products, Inc.

THE INDUSTRIAL Nurse

EDITOR

ROSAMOND J. WEBSTER, R.N., A.M., Ph.D.

The Psychologist in Industry

THE utilization of one or more psychological tests to select personnel for various types of jobs has been fairly common in large industrial and commercial establishments. Sometimes too much stress has been placed by some industrial psychologists in scoring such tests, and too little on personality, background, experience, and other factors. The psychologist has his place in business as an aid to the personnel director and to the industrial physician. Each has his part to play in the matter of staff selection. Psychology long ago achieved the status of a science, though there are various schools of thought as to how it can best serve in the field of commerce and production. One writer on the subject has defined the functions of the clinical psychologist in industry as follows: (1) to help management appraise the personality characteristics necessary for production; (2) to provide diagnostic procedures by means of tests and to offer short term therapy; and (3) to consult with industrial physicians and industrial psychiatrists. Now, it is evident that many industrial nurses are employed in companies without clinical psychologists or psychiatrists on the staffs. What can such a nurse do in instances in which an employee obviously requires such professional testing, examination and therapy? Obviously many nurses have had short courses in psychology and may even have had some experience with some of the standard psychological tests. It is, however, undesirable from many points of view for such nurses to try to apply their limited training in these areas in diagnostic or therapeutic procedures. These are responsibilities of properly trained professional men and women. Reference to a local specialist in these areas, or to a mental hygiene clinic can serve immediate needs. But such reference should only follow upon consultation with an immediate superior and preferably, with the full- or part-time plant physician.

A Check List and Convenient Coupon for Advertised Products See page 76

Weight Control

MUCH emphasis is being placed in the medical literature upon the hazards to health and longevity from obesity. The comment is general that overweight is the most frequent physical abnormality appearing in routine physical examinations. A survey of existing statistics on body weight providing data on both men and women and secured from various sources indicate that from 20 to 40 percent of those examined are 10 to 20 percent overweight. The prevalence of body weights that are 10 percent in excess of average weight for sex and height tends to increase with age. It is generally accepted that among obese persons the mortality rate is greater than in those in the normal range of body weight. There is also increased prevalence of and death from degenerative diseases, with obesity. Attention has frequently been called to life insurance statistics showing that diabetes and obesity are closely tied together. It is a matter of medical record that obesity exacts a harmful influence on the course of arthritis and in cardiovascular disease. The Journal of the American Medical Association recently pointed out some of the problems involved in obesity.

A New Approach

It seems from experience with many overweight men and women that in general, diet therapy and medication can control obesity on a long-term basis only with great difficulty. In a series of Boston experiments lasting for 16 weeks, groups of persons who had been unsuccessful in losing weight by their own efforts, met with a group leader trained to stimulate and guide intelligent discussions regarding the problem of weight

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reduction. There was evident success in this approach, which was approved by the physicians of those concerned. While this approach is only in the experimental state, it may have distinct possibilities for use in plants, with physicians determining the procedure and nurses cooperating in carrying them out. It is worth a trial.

Who is to Blame?

ACCORDING to figures compiled by a large insurance company, accident fatalities in the United States increased markedly in 1951, reversing the downward trend of the preceding three years. It is estimated that about 95,000 lives were lost in accidents last year, about 5,000 more than in 1950. A rise in an already large number of lives lost due to accidents is disturbing at any time. It is particularly so when man power is urgently needed for our armed forces and the expanding national production. Each of the main classes of accidents, except home accidents, accounted for more deaths in 1951 than in the preceding year. Motor vehicle fatalities increased by about 2,500, reaching a total of 37,500 in 1951, the highest annual toll in a decade. Mishaps in the course of and arising out of employment were responsible for an estimated 16,500 deaths, which represents a substantial rise from the year 1950. This increase undoubtedly grew out of a marked stepping up in industrial production. The worst catastrophe affecting wage earners in 1951 was the coal mine explosion in Illinois in December, which resulted in 119 deaths. Sad and serious as such a large scale loss of life is, still the large industrial total of 16,500 deaths arose from carelessness, horseplay, failure to follow standard safety rules and other factors dealing with human failures in hundreds and even thousands of establishments. The question may be asked: "Who is to blame?" Large plants long ago saw the wisdom of installing safety measures, employing safety engineers, plant physicians and industrial nurses. The multiplicity of small establishments understandably cannot afford such overhead on so large a scale, desirable as it may be. And yet, even large industrial plants have their major accidental injuries and employee deaths. It is easy for some to fall into a state of smug satisfaction. But, despite good records in the past, only an alert professional staff can maintain a fine record of safety, prevention and protection.

The New Health Commission

THERE has been considerable difference of opinion in many quarters over the desirability of health insurance legislation in this country. Some

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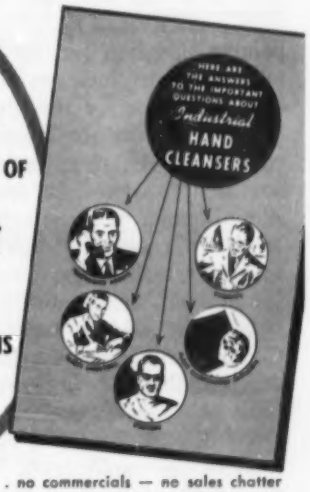

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point to England and say that the great experiment in that country indicates the value of such a plan of medical service for the United States. Others view the same experience abroad and reach an opposite conclusion. Agitation for health insurance legislation has been sponsored for some years, and the present administration in Washington has tried to have such legislation enacted, though with no success. Within recent weeks President Truman has appointed a new Commission on the Health Needs of the Nation. It is generally held that the persons appointed to the Commission represent a cross-section of the population and that they are competent in their respective fields of medicine, business, labor, etc. The Commission has been charged to make a critical study of our total health requirements, both immediate and long-term and to recommend courses of action to meet these needs. Such a study should be helpful in ending confusion in the minds of many. A number of important matters need investigation. These include, as President Truman lists them: (1) insuring an adequate supply of physicians, dentists, nurses and allied personnel; (2) developing local public health units; (3) making more hospital beds available where they are needed; (4) stepping up the tempo of fundamental research in medicine; (5) meeting the needs of the chronically ill and aged; (6) providing diagnostic, rehabilitative and other medical services to all income groups regardless of financial ability. The tasks which the Commission faces is a difficult one. Its composition seems to warrant a thorough, un-partisan report which is required to be submitted within a year. Whether the stand of those who hold that this is all a means of arriving at a governmental health insurance scheme is at all justified, remains to be seen. Present indications are that some good will come out of the new Commission.

Presumed Heart Disease

IN A research project carried out by a team of physicians under the leadership of a specialist in industrial hygiene, some interesting facts were brought out in relation to possible errors in the diagnosis of heart disease. It was pointed out that an unwarranted diagnosis of heart disease is not infrequently made in persons who have symptoms referable to the cardiovascular system or who are found to have benign murmurs of the heart. A distinguished British physician came to the conclusion that in World War I, over 80 per cent of the diagnoses of organic heart disease made by British army physicians were in error.

Evidence in this Country

Another specialist has indicated that thousands of soldiers in the American Army who did not have heart disease were carried on disability ratings with unshaken diagnosis. Other cardiac specialists have reported that as much as 60 per cent of patients who consult them do so because of anxiety about the heart arising from suggestion following the careless or inconsiderate remarks of a physician. Cardiac neurosis is fairly common as an outgrowth of perfunctory examinations by insurance or other physicians. Many cardiologists believe that much needless disability has been created through ill-advised restrictions placed upon the physical activities of persons who actually have heart disease.

Sources of Error

In the research project referred to, the records of 175 persons given erroneous diagnoses of heart disease at some time were reviewed. Nearly half had been given such a diagnosis on a routine examination by physicians in the armed forces, in schools, and in industry. Many were given diagnoses of cardiac diseases by their private physicians on the basis of anxiety symptoms simulating cardiovascular diseases, such as fatigue, dyspnea, precardial pain, and palpitation. Many of these non-cardiac patients were advised to restrict their activities, and 25 per cent were not working because of alleged heart disease. It is evident that industrial nurses must be extremely careful not to build up the concept of heart disease in workers upon whom a careful study has not been carried out and a definitive diagnosis has not been reached.

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As a convenience to executives, the new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. The catalogs, data sheets and technical bulletins reviewed here present the latest information on protective and maintenance products and equipment.

SAFETY SIGNS

Danger Signs 1
Stonehouse Signs, Inc. This attractively illustrated 6-page bulletin, the first of a series, is devoted to industrial "Danger" signs made in accordance with A.S.A. specifications. Illustrated in correct color and with prices are typical stock-worded signs available in three sizes. Also included are examples of correctly designed "Caution," "Notice," "Safety First" and "Directional" signs.

FLOOR MAINTENANCE

Non-Slip Waterproof Wax 2
Chemical Service of Baltimore. This interesting pocket folder shows how floors may be kept shiny, even under adverse weather conditions and without sacrificing safety. The folder gives details on how to apply this U.L. listed wax so that floors remain non-slip even under water, and are protected against the wear of heavy foot-traffic, dirt and moppings.

Floor Machines 3
Finnell System, Inc. This 4-page brochure pictures on the cover a combination floor scrubbing and vacuum machine for heavy industry and then gives typical examples, with specifications, of the company's complete line of maintenance machines. Included are general and heavy duty electric scrubbers, waxers and polishers; gasoline scrubber-driers; wet-and-dry vacuum cleaner; mop trucks, etc. The brochure also briefly describes the Finnell soaps and cleaners, waxes, and sealers.

Rubber Floor Resurfacer 4
Flash-Stone Co. A new bulletin describes a floor patching and resurfacing material made of pulverized natural rubber, asphalt-rock limestone and cold asphalt emulsion. This combination of materials, in ready-mixed form, is easy to apply and reduces brittleness in low temperatures, gives good traction when wet and resists rutting.

Flooring Products 5
Flintkote Co. This "Industrial Products Digest" is a highly informative and convenient 24-page booklet which serves as a guide to asphalt, rubber and resin materials. Well indexed and arranged, it includes protective coatings, flooring binders and cements, underlayments, sound deadeners and insulating compounds, joint sealers, etc., with specific uses for each product.

GUARDS

Plastic Guards for Machines 6
The Dilley Mfg. Co. Machine guards made from a strong transparent plastic that permits full view of the work and protects machine operators from flying chips are described in a well illustrated 4-page bulletin. Another unique characteristic is that the guards are attached to a powerful magnet so they can be mounted quickly and at any angle on the machine.

FIRE PROTECTION

Flammables Self-Checking Chart 7
The Protectoseal Co. This very informative and useful folder includes charts to facilitate the systematic inspection of flammable liquid hazards in industry. Separate forms are provided for various activities, such as storage, fabricating, maintenance, etc. The folder also offers valuable information on flammable vapors, explosions, flash fires, self-ignition, etc., as well as data on safety cans for handling flammables.

MACHINERY MAINTENANCE

Safety Hydraulic Fluid 8
Monsanto Chemical Co. A 12-page booklet describing in detail the properties and performance of this new non-flammable hydraulic fluid developed primarily for use in such equipment as die-casting machines, hydroelectric turbines, hydraulic presses, etc. The fluid is finding wide application in similar operations where a flammable pressure transfer fluid is a hazard. Tests demonstrating the fluid's outstanding fire resistance, chemical stability, non-corrosiveness and pumpability are fully depicted with charts and pictures.

Metal Detector 9
Eriez Manufacturing Co. A new catalog on the "RCA Special Metal Detector" a protecting device designed for the inspection of thin sections such as strips of chewing gum, record compounds, rubber products and any other material in sheet form. The device permits the continuous inspection of non-metallic material which is fed through an aperture by a conveyor belt, vibrating conveyor, chute, or some other type of materials-handling equipment. The catalog is complete with specification tables and scale drawings of the device.

Lubricating & Electrical Products 10
Trico Fuse Mfg. Co. A quick reference folder briefly describes renewable, one-time and plug fuses, fuse pullers, clamps for fuse clips, test clamps and automatic oilers. The latter are arranged in a handy wall chart showing various types and sizes with suggestions for proper selection and application.

Motor Repair Equipment 11
Crown Industrial Products Co. An 8-page brochure describes and illustrates various types of equipment to facilitate the repair of electric motors. Included are coil winder drives, coil winder heads, armature and stator holders, growlers, insulation formers, and coil tamping tools and wedge drivers.

PERSONAL PROTECTION

Lens Cleaning Tissue 12
Silicone Paper Co. of America, Inc. "You Have to Make It Easy!" is the title of a 4-page illustrated brochure that describes how simply industrial and office workers can keep their goggles and glasses clean by means of a specially treated tissue. It points out the advantages of clear sight in preventing accidents and also describes the tissue dispenser.

DUST CONTROL

Dust Collectors 13
Torit Mfg. Co. The complete line of dust collectors is described in detail in a new 24-page catalog, which includes both cabinet and cyclone types in numerous sizes. The catalog also shows fittings & accessories and a series of blueprint sketches giving over-all dimensions of each unit. Excellent photographs depict the adaptability of the units in meeting specific industrial problems.

THERMOSTATS

Temperature Controls 14
Fenwal, Inc. The design, operating characteristics and installation of each of the 10 variations on the basic Fenwal thermostatic device are described in a new 52-page catalog. Special sections are devoted to selection and application, principles of the Thermoswitch, modifications, special features (including fire detectors), protective wells and temperature test kits.

LIGHTING

Extension Lights 15
Daniel Woodhead Co. An illustrated folder outlines the safety features of these water-tight and oil-resisting portable hand lamps. Illustrated is a light equipped with a transformer that is tested to 1600 volts.

HAND TOOLS

Non-Sparking Tools 16
Ampco Metal, Inc. A new 4-page booklet contains factual information, such as sizes and weights, on spark-resisting tools for use where flammable and explosive materials are handled. Included are: chisels, screwdrivers, wrenches, hammers, shovels, pliers, scrapers, etc.

LADDERS

Light Metal Ladders 17
Duraluminum Mfg. Co. A 6-page folder describes and illustrates the safety features of these straight and extension ladders. A table gives the weights of various sizes of the ladders.

RADIATION EQUIPMENT

Radiation Instruments 18
General Electric Co. This new 8-page bulletin contains essential information on ten recent radiation detectors: monitor, scintillation counter, portable probe, area monitor, gamma meter, alpha counter, ionization chamber, boron-coated tube, thermocouple vacuum gage, step-motor impulse counter. The instruments are for use in industry, hospitals, laboratories and civil defense.

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What's New...

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NO-MIST PREVENTS FOG

A NEW and economical anti-fogging and lens cleaning solution has been developed for use on glass and plastic surfaces. The invisible coating is non-streaking and resists the formation of fog or moisture particles caused by humidity, body heat or temperature changes.

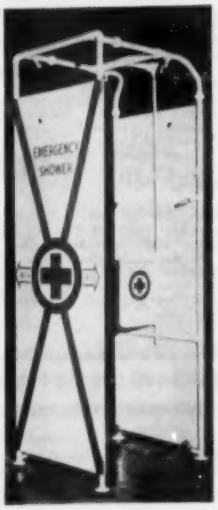
Called "NO-MIST," one application of the liquid will provide anti-fog protection for 24 hours. It may be applied by hand or by means of a convenient sprayer attached to the bottle. Available in 8-ounce bottles, the product is being packaged for extra safety in plastic as well as glass bottles by Carol Chemical Products, Corp.

By simply applying NO-MIST at the beginning of each day and wiping with a soft cloth or tissue, workers in the most difficult atmospheric conditions can keep their glasses, faceshields, respirators and hoods clear, safe and comfortable. For details, use the coupon.

EMERGENCY SHOWER

EMERGENCY or decontamination showers manufactured by Logan Emergency Showers, Inc., of California, have been designed to utilize the most modern techniques of spraying water to rapidly quench fire, or in a matter of seconds dilute and remove acids or other chemicals and foreign materials contaminating clothing or the human body.

The showers are offered in three basic models to meet the requirements of various exposures. The maximum-exposure model is designated as Series 5010. Ingeniously located sprays enables this model to instantly wet and wash all portions of the clothing and body. Tests with a high-viscosity water-soluble test material show that all material is completely removed from all parts of the body, without rubbing, in only 15 seconds! The sprays are located so that all parts of the body are reached simultaneously. For example, in addition to the orthodox overhead sprays there are four bottom sprays directed upward to reach under smocks, coats, etc. Water directed in this manner assures thorough wetting between the legs, under the buttocks and calves of the user. The feet are reached by four streams directed from holes at the base of the shower, which also act as drains. In addition two special sprays play on the eyes and face without interfering with sight or breathing.



This high-speed shower is built so that it can be entered from two sides and is instantly activated by the slightest pressure on a gate which swings in either direction. The valve remains open after being activated until manually closed, thus leaving user's hands free. This shower is made for either inside or outside installation. For outdoor use valve is located below the frost line. For details, send in the coupon.

NEW PLASTIC SAFETY LENS

THE American Optical Co., of Massachusetts, announced the development of plastic safety lenses made in a unique new air-conditioned room where the lenses are scientifically "baked" in glass molds. The plastic lenses, half the weight of their glass counterpart are extraordinarily resistant to breakage.

Production of the eye-saving lenses has been inaugurated by the company in the specially built and equipped room. It was built in order to eliminate the possibility that any dirt would show up in the plastic lenses and affect their appearance and quality. This setup, combined with a new chemical formula and new manufacturing techniques, produces lenses that are optically perfect, clear as crystal and exceptionally tough, according to A. O.

Tests have disclosed the lenses are highly resistant to such eye hazards as splashing chemicals, welding spatter, emery wheel sparks, and the impact of hard, small, high velocity particles; as well as lens fogging caused by steamy work conditions. The lenses are made by combining certain chemicals with a thermosetting liquid plastic which solidifies under heat to provide scratch resistance.

In laboratory tests it was discovered the lenses survive the impact of a nine-ounce steel ball dropped from a height of nearly four feet; an ounce-and-a-half steel needle dropped from a height of more than four feet; and a small projectile traveling at a speed of close to 100 feet a second.

ADJUSTABLE SAFETY TONGS

THE addition of a new model to their line of lightweight safety tongs is announced by Magline Inc., of Michigan. The new design incorporates fully adjustable handles to provide greater ease and flexibility for press and shear feeding operations. Simply operated, the new tongs adjust instantly to any desired position. Durably constructed of specially alloyed magnesium, the tongs are designed to crush, if accidentally caught within the die opening, thus preventing damage to the die. The company states that the new safety tongs possess magnesium's amazing rigidity, lightness and durability. For additional information send in the coupon.

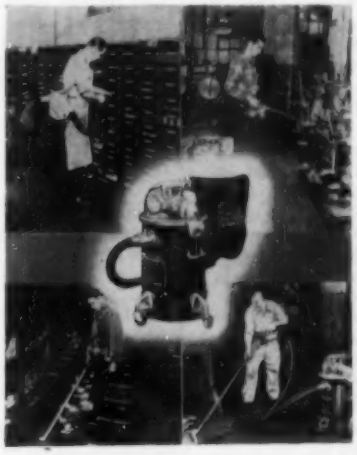
LIQUID SWEEPING COMPOUND

A NEW liquid sweeping compound that you put in your mop eliminates the inconvenient, time-consuming, untidy task of spreading and pushing compound over the surface. Poured into the mop, it spreads evenly, is thoroughly absorbed, and ready for action. It assures that every inch of surface reached by your mop receives a consistently high, efficient cleansing treatment. Shaking removes dust, and a simple water rinse restores mop to true cleanliness—instantly. Containing wax, this liquid sweeping compound is good to use on all types of floor surfaces—linoleum, rubber, asphalt tile, terrazzo, marble, wood, painted surfaces, plastic, and over wax. It also gives added protection to the surface as it cleans. Made by Chemical Service of Baltimore, it can be used also on walls and woodwork.

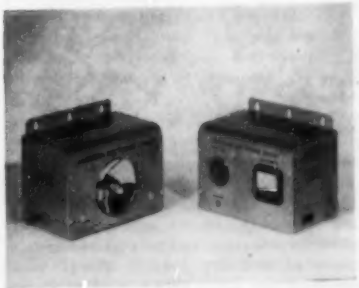
INDUSTRIAL VACUUM CLEANER

THE versatile Tornado Model 92 industrial vacuum cleaner is being made a special feature at winter and spring trade shows, say Breuer Electric Mfg. Co. of Chicago. This high-power vacuum cleaner can quickly become a powerful hand-carried blower-cleaner, a portable hand vacuum cleaner for off-the-floor cleaning, a portable "air-sweeper," or, with all units attached, a compact, efficient, powerful universal suction cleaner for plant and offices. The complete motor and fan housing is removable for use in the portable units.

It has a powerful 1½ H. P. air cooled universal motor which operates at a speed



of 13,000 R. P. M., creating a suction of over *230 cubic feet* per minute. This tremendous suction permits easy pickup of water, scrubbing solutions, metal chips, sweeping and scrubbing compound, machining coolant, oil, etc. A large 12-gallon capacity tank and a heavy exterior bag for dust and fine particles makes the Tornado Model 92 a complete, heavy duty cleaning aid. Finish is baked enamel, the complete unit weighs only 50 lbs. For details use the coupon.



NEW SMOKE DETECTOR

THE "American Electronic Sentry," manufactured by American Encoustic Tiling Co., of Pennsylvania, is a new type smoke detector designed for rapid detection of smoke over large areas. It can give you better protection than watchmen because it is constantly on duty in all critical areas, reporting in immediately to a central point the first sign of danger. Smoke usually precedes most fires. Detection of smoke in critical areas can prevent actual fires and thus prevent both fire and water damage. One Unit will protect an area approximately 30 feet by 150 feet. Larger areas, individual buildings, enclosed drying areas can all be protected through a common Annunciator Panel. Loud exterior alarms or distant interior alarms can be operated from the Annunciator Panel to attract attention to trouble being reported on the Panel. A series of indicating lamps on the Annunciator Panel indicates the location of the alarm received by the system.

It can prove a valuable asset in hospitals, nursing homes, barracks buildings, hotels, etc. Fur Vaults, Drafting Rooms, Warehouses, and like areas, where watchmen or guards are not normally desired, can be protected against fire. Once installed, it cannot be put out of action in the field as actual damage or sabotage of the Unit will sound an alarm over the power failure or regular alarm circuits. For details, send in the coupon.

INDUSTRIAL WINDOW CLEANER

A WINDOW cleaning problem that has stumped experts for years has been solved by Abco, Inc., of Pennsylvania, manufacturers of sanitary maintenance chemicals and equipment.

Many industrial facilities are troubled with the vexing problem of cleaning windows that have been coated with chemicals and by-products resulting from their own manufacturing processes and that of near-by-plants. This is especially true in the case of iron and steel plants where oxidation takes place on the glass surface and makes cleaning a difficult task. Taking a fresh approach to the problem, Abco now has available, a special pressure tank which, when used in conjunction with their product FENETREX, sprays a solution over the dirty coated windows. The solution is then hosed off with water and the windows are clean. This industrial window cleaning system eliminates the physical hazards of window washing operations as extension attachments allow the operator to stand at ground level and clean windows at considerable heights. For further information mail in the coupon.

POCKET DISPENSER

A NEW pocket-size K-LENS-M dispenser called TWINKIT, an individual plastic kit containing Lens Cleaner and Anti-Fogging Liquid, will be introduced by The Wilkins Co., Inc., of New York, at the 22nd Annual Greater New York Safety Conference and other safety shows. The handy-size dispenser has been developed in response to demand from industrial safety engineers for individual, off-premise use of lens cleaning and anti-fogging products by workers who must wear glasses or goggles. The Anti-Fogging Liquid, introduced a year ago, has been tested under the severest conditions—and has proved it will repel steaming of glasses or goggles for a full work day.

The pocket-size non-spill plastic TWINKIT container will be specially welcomed by linemen, road workers, truck drivers, construction crews, field men, and others who work outside the plant in all kinds of weather, frequently under hazardous conditions where clear vision is vital. One application usually lasts a full work-day or longer, depending on the severity of conditions. Fur further details send in the coupon.

March, 1952

To Safety Maintenance & Production

75 Fulton St., New York 38, N. Y.

For prices and complete details of items mentioned in this month's "What's New in Safety Products," check items that interest you and mail coupon.

- ☐ No-Mist Prevents Fog
- ☐ Emergency Shower
- ☐ New Plastic Safety Lens
- ☐ Adjustable Safety Tongs
- ☐ Liquid Sweeping Compound
- ☐ Industrial Vacuum Cleaner
- ☐ New Smoke Detector
- ☐ Industrial Window Cleaner
- ☐ Pocket Dispenser
- ☐ Lightweight Safety Hat
- ☐ Non-Slip Gloves
- ☐ Acid Safety Goggle
- ☐ Anti-Skid Floor Finish

Firm Name .....

Attention of .....

Position .....

Firm Address .....

City .....

LIGHTWEIGHT SAFETY HAT

THE problem of getting men engaged in occupations where head injuries are a hazard to wear safety hats has been solved by the Davis Emergency Equipment Co. Inc. of N. J. It has developed a new safety hat that is good looking and comfortable.

Called Plastoglas Hedgard, the new hat combines strength, high dielectric properties, unusual shock absorbing features, and design that protects the neck from dripping fluids and the sun. It is said to be lighter and has a cradle that makes the hat fit every size and shape of head. Free air circulation in the interior gives coolness even under hot sun. Two models are available: with a broad slanting brim all around (hat), and with a front visor-like brim (cap). Standard finishes are aluminum and brown. For details use the coupon.

NON-SLIP GLOVES

AN IMPROVED plastic coating on these new work gloves provides lasting flexibility and improves their gripping qualities, according to the maker, Edmont Manufacturing Co. They are called "Monkey-Grip" because of this extra flexibility, which is obtained by compounding the vinyl coating with special plasticizers. This tough, liquid-proof coating is bonded to the fabric lining and will not crack or peel. The gloves are said to be highly abrasion resistant and to outwear several pairs of ordinary leather gloves when handling any rough objects such as stampings, castings, dies and molds, lumber, and abrasives used for grinding. They are also resistant to oil and grease, acids and other chemicals and are supplied in knit-wrist, band-top and gauntlet styles, coated overall or palm and thumb. Send in the coupon for details on all styles and a handy performance chart showing the comparative characteristics of plastic, neoprene and natural rubber coated gloves for your particular job application.

ACID SAFETY GOGGLE

A NEW acid safety goggle, named "Duo-Chem," features a bright yellow vinyl frame, the American Standards Association color code for acids, which affords quick visual identification of it as an Acid Goggle. The bright yellow vinyl frame is soft enough to mold in a tight seal to facial contours and has maximum resistance to acids and alkalis. Metal hoods over screen vents offer safe, adequate ventilation. The one-piece lens is made from a special vinyl acid-resistant optical plastic which will not stain or discolor from acid fumes, vapors or splashes. The lens is replaceable and can be quickly and easily removed. It is optically correct and meets Federal Specifications for impact resistance The manufacturer the U. S. Safety Service Co., of Missouri, claims that the Duo-Chem offers full protection from all chemical splashes and dusts. It will fit over personal glasses and because of its extreme light weight (a little over one ounce) and attractive appearance, it should receive fine employee acceptance. Further details may be obtained by mailing in the coupon.

ANTI-SKID FLOOR FINISH

A NEW development in chemistry announced by the Shralyte Co., of Cleveland, is an emulsified plastic floor finish. This modern anti-skid is practical for use on nearly all types of floors or flooring, such as linoleum, rubber, cork, asphalt tile, magnesite, etc. The manufacturer claims that this emulsified plastic does not contain nor develop any chemical reaction which is harmful to any known type of flooring or affect the most delicate colors to which it is applied.

The Shralyte Co. expressly state that this new protective coating does not contain wax and is easily removed with soap, water and ammonia. Because of its unusual properties it dries in twenty minutes to a high lustre requiring no polishing or buffing. It has been examined and approved by Underwriters Laboratories, Inc. For further details, send in the coupon.

INSIDE THE TRADE

Pangborn Opens New Demonstration Room

SO THAT potential users can see blast cleaning and dust control equipment in operation, the Pangborn Corporation has inaugurated a new Demonstration Room at its plant in Hagerstown, Maryland. The room, 58 by 61-feet in size, was operated before an audience for the first time at Pangborn's recent open house.

Machines on display range all the way from a hard hitting 15-ton monorail installation (the type used by the automobile industry to blast clean as many as 240 engine cylinder blocks per hour) to a special miniature (90 pounds) adaptation of a liquid blasting process which can be used on materials as delicate as wrist watch gears.

Other machines to be seen include a big continuous-flow cleaning barrel of the type used by many industries for continuous, production-line blast cleaning of small castings; a large room for blast cleaning of king-size castings; a nine foot table, one of industry's most versatile cleaning room tools; a standard finishing cabinet—widely used to provide smooth finishes on dies, molds and precision equipment built to close tolerances; small airblast barrels and cabinets with unit-type dust collectors; and the interesting new portable soft abrasive ("corn cob") blast cleaning machine. This latter machine, a recent development, utilizes compressed air and finely ground corn cobs to blast the dirt, rust and grease off electric motors and mechanical equipment without damage to wiring, gears and precision parts.

The reason for the room is to enable potential users of blast cleaning and dust control equipment to send or bring samples of work to Hagerstown and have it processed. In this manner they can determine which is the best piece of equipment to fit their needs. Also, an operating display of this type shows design, production, and plant engineers how this equipment can physically be fitted into their specific process.

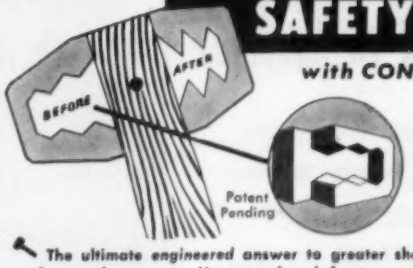
The new room is under the supervision of Ralph R. Garver, a Pangborn engineer of 36 years experience.

New Producer of Plastic Prescription Lenses

THE manufacture and sale of the I-Gard plastic (ophthalmic) lenses, a recent development in the correction and protection of sight, has been taken over by the McLeod Optical Company, Inc., 357 Westminster St., Providence, R. I. The surface-hardened lenses are available in both prescription and plano form, have an unusual resistance to impact as well as other safety features, and can be fitted to any standard safety goggles.

The lenses are obtainable through any ophthalmologist, optometrist or optician. Among the regional distributors already appointed by McLeod Optical Co., Inc. to serve the needs of industry are: Blue Ridge Optical Co., Roanoke, Va.; Bradley Optical Co., Los Angeles, Calif.; Cannon Optical Co., Philadelphia, Pa.; Central Optical Co., Mobile, Ala.; Dietz Optical Co., Fort Worth, Texas; Hawkeye Optical Co., Des Moines, Iowa; Homer Optical Co., Washington, D. C.; Knoxville Optical Dispensary, Knoxville, Tenn.; Lakeland Optical Co., Auburn, N. Y.; Paramount Optical Laboratories, Portland, Ore.; Rooney Optical Co., Cleveland, Ohio; Sutherland Optical Co., Kansas City, Mo.

Now! THE Great NEW
CUSTANITE Flex-Flo SAFETY HAMMER
with CONTROLLED COMPRESSION!



This exclusive feature provides a malleable, metal safety hammer of extreme durability. CONTROLLED COMPRESSION improves tensility, conserves hammer shape, prevents mushrooming.

The ultimate engineered answer to greater shop safety and economy. Hammer head features an analytically-controlled copper-base alloy. Unique corrugated construction provides CONTROLLED COMPRESSION — eliminates mushrooming. Non-ferrous, electrolytically-pure metals assure spark-free performance, prevent chipping or flaking. Balance is retained under heaviest usage. CUSTANITE Flex-Flo SAFETY HAMMER* — costs less, too — it's guaranteed to outlast ordinary rawhide, plastic, rubber or metal hammers up to 12 times or more!

6 CONVENIENT WEIGHTS AND SIZES: ¾ lb., 1½ lbs., 2¼ lbs., 3 lbs., 4½ lbs., 6 lbs. Send for prices and further information.

WON'T MUSHROOM!
WON'T CHIP!
WON'T FLAKE!
WON'T SPARK!
RIVET-LOK HEAD WON'T COME OFF!
NON-FERROUS THROUGHOUT!
*Trade Mark

THE CUSTANITE CORPORATION
132 LARCHMONT AVENUE, LARCHMONT, N. Y.

check list

OF PRODUCTS ADVERTISED IN THIS ISSUE

For full details, without obligation, merely circle the code number, fill in your name and address, and mail to: Service Dept., SAFETY MAINTENANCE & PRODUCTION, 75 Fulton St., New York 38, N. Y.

MARCH, 1952

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AND HERE'S MITZI

Stonehouse

Mark's little sister lives the life of Riley... but safely!

Knows a lot, such as when she's hungry and what to do about it...and how to go to sleep in two seconds. How many of *us* can do that?

Mitzi's one of the Stonehouse family pets. Doesn't take advantage of it, tho—not much.

While she doesn't go in for hard work, Mitzi acts like she understands the safety slogan: "Be Careful—at Work or Play."

Second of a "Mark and Mitzi Stonehouse" series. They will appear in the May issue, with Mr. Stonehouse.

Stonehouse

SIGNS, inc. MANUFACTURERS • Stonehouse Bldg., 9th at Larimer
Denver 4, Colorado

"Signs Since 1863"

ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

for industrial *First Aid*

MERCUROCHROME*

(H. W. & D. BRAND OF MERBROMIN, DIBROMOXYMERCURIFLUORESCEIN-SODIUM)

Do not neglect wounds, however small; even scratches and small cuts may become infected if they are not promptly and properly treated.

'Mercurochrome' (H.W. & D. brand of merbromin, dibromoxymercurifluorescein-sodium) is one of the best antiseptics for first aid use. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association for this purpose.

The 2% aqueous solution is not irritating or toxic in wounds; minor injuries are reported more promptly when 'Mercurochrome' is the routine antiseptic, because treatment is not painful.

'Mercurochrome' solution keeps indefinitely; the color shows where it has been applied.

Physicians have used 'Mercurochrome' for more than 28 years.

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY

Be sure to include 'Mercurochrome' in your first aid supplies.

*Reg. U. S. Pat. Off.

HYNSON, WESTCOTT & DUNNING, INC.

HW&D BALTIMORE, MARYLAND